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☑ Final Report
☐ Re-Issued Report
☐ Revised Report

Report Date:
11-Oct-16 14:38

Laboratory Report

Gulf Oil L.P.
281 Eastern Avenue
Chelsea, MA 02150
Attn: Andrew P. Adams

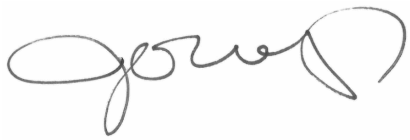
Project: Gulf Terminal - Chelsea, MA
Project #: Gulf Chelsea

Laboratory ID	Client Sample ID	Matrix	Date Sampled	Date Received
SC26445-01	Outfall 003	Surface Water	28-Sep-16 11:30	28-Sep-16 15:30
SC26446-01	Chelsea Creek	Surface Water	28-Sep-16 11:30	28-Sep-16 15:30

I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. These results relate only to the sample(s) as received.
All applicable NELAC requirements have been met.

Massachusetts # M-MA138/MA1110
Connecticut # PH-0777
Florida # E87936
Maine # MA138
New Hampshire # 2972/2538
New Jersey # MA011
New York # 11393
Pennsylvania # 68-04426/68-02924
Rhode Island # LAO00348
USDA # P330-15-00375
Vermont # VT-11393

Authorized by:



June O'Connor
Laboratory Director

Eurofins Spectrum Analytical holds primary certification in the State of Massachusetts for the analytes as indicated with an X in the "Cert." column within this report. Please note that the State of Massachusetts does not offer certification for all analytes. Please refer to our website for specific certification holdings in each state.
Please note that this report contains 22 pages of analytical data plus Chain of Custody document(s). When the Laboratory Report is indicated as revised, this report supersedes any previously dated reports for the laboratory ID(s) referenced above. Where this report identifies subcontracted analyses, copies of the subcontractor's test report are available upon request. This report may not be reproduced, except in full, without written approval from Eurofins Spectrum Analytical, Inc.

Eurofins Spectrum Analytical, Inc. is a NELAC accredited laboratory organization and meets NELAC testing standards. Use of the NELAC logo however does not insure that Eurofins Spectrum Analytical, Inc. is currently accredited for the specific method or analyte indicated. Please refer to our Quality'web page at www.spectrum-analytical.com for a full listing of our current certifications and fields of accreditation. States in which Eurofins Spectrum Analytical, Inc. holds NELAC certification are New York, New Hampshire, New Jersey, Pennsylvania and Florida. All analytical work for Volatile Organic and Air analysis are transferred to and conducted at our 830 Silver Street location (PA-68-04426).

Please contact the Laboratory or Technical Director at 800-789-9115 with any questions regarding the data contained in this laboratory report.

CASE NARRATIVE:

Data has been reported to the MDL. This report includes estimated concentrations detected below the RDL and above the MDL (J-Flag).

All non-detects and all results below the detection limit are reported as "<" (less than) the detection limit in this report.

The samples were received 0.5 degrees Celsius, please refer to the Chain of Custody for details specific to temperature upon receipt. An infrared thermometer with a tolerance of +/- 1.0 degrees Celsius was used immediately upon receipt of the samples.

If a Matrix Spike (MS), Matrix Spike Duplicate (MSD) or Duplicate (DUP) was not requested on the Chain of Custody, method criteria may have been fulfilled with a source sample not of this Sample Delivery Group.

Analyses for Total Hardness, pH, and Total Residual Chlorine fall under the state of Pennsylvania code Chapter 252.6 accreditation by rule.

Report SC26445 and SC26446 together per email 10/11/16. MMB

See below for any non-conformances and issues relating to quality control samples and/or sample analysis/matrix.

EPA 200.8

Duplicates:

1617045-DUP1 *Source: SC26446-01*

Analyses are not controlled on RPD values from sample concentrations that are less than 5 times the reporting level. The batch is accepted based upon the difference between the sample and duplicate is less than or equal to the reporting limit.

Lead

The Reporting Limit has been raised to account for matrix interference.

Cadmium
Lead
Nickel

Samples:

SC26446-01 *Chelsea Creek*

The Reporting Limit has been raised to account for matrix interference.

Cadmium
Lead
Nickel

SM4500-Cl-G (11)

Spikes:

1616715-MS1 *Source: SC26446-01*

The spike recovery for this QC sample is outside of established control limits due to sample matrix interference.

Total Residual Chlorine

1616715-MSD1 *Source: SC26446-01*

The spike recovery for this QC sample is outside of established control limits due to sample matrix interference.

Total Residual Chlorine

SW846 8260C

Calibration:

1609039

SW846 8260C

Calibration:

1609039

Analyte quantified by quadratic equation type calibration.

Ethylbenzene
m,p-Xylene
Naphthalene
o-Xylene

This affected the following samples:

1616774-BLK1
1616774-BS1
1616774-BSD1
Chelsea Creek
Outfall 003
S607884-ICV1
S608282-CCV1

Samples:

SC26445-01 *Outfall 003*

Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogates with three required by program methods.

Dibromofluoromethane

SW846 8270D

Samples:

S608304-CCV1

Analyte percent difference is outside individual acceptance criteria (20), but within overall method allowances.

4-Nitrophenol (-23.8%)
Pentachlorophenol (-42.5%)

Analyte percent drift is outside individual acceptance criteria (20), but within overall method allowances.

2,4-Dinitrophenol (-22.6%)
Benzoic acid (-33.0%)

This affected the following samples:

1616744-BLK1
1616744-BS1
1616744-BSD1

SW846 8270D SIM

Calibration:

1607048

Analyte quantified by quadratic equation type calibration.

Benzo (a) pyrene

SW846 8270D SIM

Calibration:

1607048

This affected the following samples:

1616744-BLK2
1616744-BS2
1616744-BSD2
Chelsea Creek
Outfall 003
S606147-ICV1
S608303-CCV1
S608344-CCV1

Laboratory Control Samples:

1616744 BSD

Naphthalene RPD 21% (20%) is outside individual acceptance criteria.

Samples:

S608303-CCV1

Analyte percent difference is outside individual acceptance criteria (20), but within overall method allowances.

Benzo (b) fluoranthene (20.3%)

This affected the following samples:

1616744-BLK2
1616744-BS2
1616744-BSD2

Sample Acceptance Check Form

Client:	Gulf Oil L.P.
Project:	Gulf Terminal - Chelsea, MA / Gulf Chelsea
Work Order:	SC26445
Sample(s) received on:	9/28/2016

The following outlines the condition of samples for the attached Chain of Custody upon receipt.

	Yes	No	N/A
Were custody seals present?	☐	☑	☐
Were custody seals intact?	☐	☐	☑
Were samples received at a temperature of ≤ 6°C?	☑	☐	☐
Were samples cooled on ice upon transfer to laboratory representative?	☐	☑	☐
Were samples refrigerated upon transfer to laboratory representative?	☐	☑	☐
Were sample containers received intact?	☑	☐	☐
Were samples properly labeled (labels affixed to sample containers and include sample ID, site location, and/or project number and the collection date)?	☑	☐	☐
Were samples accompanied by a Chain of Custody document?	☑	☐	☐
Does Chain of Custody document include proper, full, and complete documentation, which shall include sample ID, site location, and/or project number, date and time of collection, collector's name, preservation type, sample matrix and any special remarks concerning the sample?	☑	☐	☐
Did sample container labels agree with Chain of Custody document?	☑	☐	☐
Were samples received within method-specific holding times?	☑	☐	☐

Sample Acceptance Check Form

Client:	Gulf Oil L.P.
Project:	Gulf Terminal - Chelsea, MA / Gulf Chelsea
Work Order:	SC26446
Sample(s) received on:	9/28/2016

The following outlines the condition of samples for the attached Chain of Custody upon receipt.

	Yes	No	N/A
Were custody seals present?	☐	☑	☐
Were custody seals intact?	☐	☐	☑
Were samples received at a temperature of ≤ 6°C?	☑	☐	☐
Were samples cooled on ice upon transfer to laboratory representative?	☐	☑	☐
Were samples refrigerated upon transfer to laboratory representative?	☐	☑	☐
Were sample containers received intact?	☑	☐	☐
Were samples properly labeled (labels affixed to sample containers and include sample ID, site location, and/or project number and the collection date)?	☑	☐	☐
Were samples accompanied by a Chain of Custody document?	☑	☐	☐
Does Chain of Custody document include proper, full, and complete documentation, which shall include sample ID, site location, and/or project number, date and time of collection, collector's name, preservation type, sample matrix and any special remarks concerning the sample?	☑	☐	☐
Did sample container labels agree with Chain of Custody document?	☑	☐	☐
Were samples received within method-specific holding times?	☑	☐	☐

Summary of Hits

Lab ID: SC26445-01 **Client ID:** Outfall 003

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Cadmium	0.00006	J	0.00020	mg/l	EPA 200.8
Chromium	0.00122		0.00050	mg/l	EPA 200.8
Copper	0.0105		0.00050	mg/l	EPA 200.8
Lead	0.00089		0.00025	mg/l	EPA 200.8
Nickel	0.00509		0.00025	mg/l	EPA 200.8
Zinc	0.00843		0.00500	mg/l	EPA 200.8
Salinity	6.20		1.00	ppt (1000)	SM 2520 (01)
Total Solids	7400		50.0	mg/l	SM2540 B (11)
Total Suspended Solids	11.0		0.7	mg/l	SM2540D (11)
Ammonia as N	3.36		0.200	mg/l	SM4500-NH3 C. (11)
Total Organic Carbon	9.03		1.00	mg/l	SM5310B (00, 11)
Toluene	2.8		1.0	µg/l	SW846 8260C

Lab ID: SC26446-01 **Client ID:** Chelsea Creek

Parameter	Result	Flag	Reporting Limit	Units	Analytical Method
Copper	0.0304		0.00050	mg/l	EPA 200.8
Lead	0.00053	R01, J,	0.00125	mg/l	EPA 200.8
Nickel	0.00831	R01, D	0.00125	mg/l	EPA 200.8
Zinc	0.0197		0.00500	mg/l	EPA 200.8
Salinity	28.1		1.00	ppt (1000)	SM 2520 (01)
Total Solids	34100		500	mg/l	SM2540 B (11)
Total Suspended Solids	11.1		0.5	mg/l	SM2540D (11)
Ammonia as N	0.210		0.200	mg/l	SM4500-NH3 C. (11)
Total Organic Carbon	9.17		1.00	mg/l	SM5310B (00, 11)
Naphthalene	0.108		0.052	µg/l	SW846 8270D SIM
Phenanthrene	0.061		0.052	µg/l	SW846 8270D SIM

Please note that because there are no reporting limits associated with hazardous waste characterizations or micro analyses, this summary does not include hits from these analyses if included in this work order.

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
Outfall 003	Gulf Chelsea	Surface Water	28-Sep-16 11:30	28-Sep-16
SC26445-01				

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Volatile Organic Compounds													
Volatile Organic Compounds by SW846 8260 Prepared by method SW846 5030 Water MS													
71-43-2	Benzene	< 1.0		µg/l	1.0	0.3	1	SW846 8260C	29-Sep-16	29-Sep-16	GMA	1616774	
100-41-4	Ethylbenzene	< 1.0		µg/l	1.0	0.3	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	< 1.0		µg/l	1.0	0.3	1	"	"	"	"	"	
91-20-3	Naphthalene	< 1.0		µg/l	1.0	0.3	1	"	"	"	"	"	
108-88-3	Toluene	2.8		µg/l	1.0	0.3	1	"	"	"	"	"	
75-01-4	Vinyl chloride	< 1.0		µg/l	1.0	0.5	1	"	"	"	"	"	
179601-23-1	m,p-Xylene	< 2.0		µg/l	2.0	0.4	1	"	"	"	"	"	
95-47-6	o-Xylene	< 1.0		µg/l	1.0	0.5	1	"	"	"	"	"	
75-65-0	Tert-Butanol / butyl alcohol	< 10.0		µg/l	10.0	6.0	1	"	"	"	"	"	
64-17-5	Ethanol	< 200		µg/l	200	23.6	1	"	"	"	"	"	
Surrogate recoveries:													
460-00-4	*4-Bromofluorobenzene*	*80*			*70-130 %*			"	"	"	"	"	
2037-26-5	*Toluene-d8*	*97*			*70-130 %*			"	"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*126*			*70-130 %*			"	"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*133*	SGCMS VOC		*70-130 %*			"	"	"	"	"	
Semivolatile Organic Compounds by GCMS													
Acid Extractables/Phenols Prepared by method SW846 3510C													
108-95-2	Phenol	< 1.02	U	µg/l	5.21	1.02	1	SW846 8270D	29-Sep-16	06-Oct-16	MSL	1616744	
Surrogate recoveries:													
367-12-4	*2-Fluorophenol*	*42*			*15-110 %*			"	"	"	"	"	
4165-62-2	*Phenol-d5*	*36*			*15-110 %*			"	"	"	"	"	
SVOCs by SIM													
83-32-9	Acenaphthene	< 0.052		µg/l	0.052	0.032	1	SW846 8270D SIM	"	30-Sep-16	MSL	"	
208-96-8	Acenaphthylene	< 0.052		µg/l	0.052	0.033	1	"	"	"	"	"	
120-12-7	Anthracene	< 0.052		µg/l	0.052	0.028	1	"	"	"	"	"	
56-55-3	Benzo (a) anthracene	< 0.052		µg/l	0.052	0.025	1	"	"	"	"	"	
50-32-8	Benzo (a) pyrene	< 0.052		µg/l	0.052	0.038	1	"	"	"	"	"	
205-99-2	Benzo (b) fluoranthene	< 0.052		µg/l	0.052	0.036	1	"	"	"	"	"	
191-24-2	Benzo (g,h,i) perylene	< 0.052		µg/l	0.052	0.028	1	"	"	"	"	"	
207-08-9	Benzo (k) fluoranthene	< 0.052		µg/l	0.052	0.029	1	"	"	"	"	"	
218-01-9	Chrysene	< 0.052		µg/l	0.052	0.024	1	"	"	"	"	"	
53-70-3	Dibenzo (a,h) anthracene	< 0.052		µg/l	0.052	0.027	1	"	"	"	"	"	
206-44-0	Fluoranthene	< 0.052		µg/l	0.052	0.021	1	"	"	"	"	"	
86-73-7	Fluorene	< 0.052		µg/l	0.052	0.031	1	"	"	"	"	"	
193-39-5	Indeno (1,2,3-cd) pyrene	< 0.052		µg/l	0.052	0.022	1	"	"	"	"	"	
91-20-3	Naphthalene	< 0.052		µg/l	0.052	0.028	1	"	"	"	"	"	
85-01-8	Phenanthrene	< 0.052		µg/l	0.052	0.027	1	"	"	"	"	"	
129-00-0	Pyrene	< 0.052		µg/l	0.052	0.023	1	"	"	"	"	"	
Surrogate recoveries:													
205440-82-0	*Benzo (e) pyrene-d12*	*87*			*30-130 %*			"	"	"	"	"	
Extractable Petroleum Hydrocarbons Prepared by method SW846 3510C													

This laboratory report is not valid without an authorized signature on the cover page.

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
Outfall 003 SC26445-01	Gulf Chelsea	Surface Water	28-Sep-16 11:30	28-Sep-16

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Extractable Petroleum Hydrocarbons													
Prepared by method SW846 3510C													
	Oil & Grease	< 1.01		mg/l	1.01	0.239	1	EPA 1664B	30-Sep-16	30-Sep-16	SAL	1616827	X
Total Metals by EPA 200/6000 Series Methods													
Prepared by method General Prep-Metal													
	Preservation	**Field Preserved; pH<2 confirmed**		N/A			1	EPA 200/6000 methods	28-Sep-16		BK	1616699	
Total Metals by EPA 200 Series Methods													
7440-43-9	Cadmium	**0.00006**	J	mg/l	0.00020	0.00003	1	EPA 200.8	05-Oct-16	07-Oct-16	edt	1617045	X
7440-47-3	Chromium	**0.00122**		mg/l	0.00050	0.00027	1	"	03-Oct-16	07-Oct-16	"	1616918	X
7440-50-8	Copper	**0.0105**		mg/l	0.00050	0.00010	1	"	"	04-Oct-16	"	"	X
7440-02-0	Nickel	**0.00509**		mg/l	0.00025	0.00005	1	"	05-Oct-16	07-Oct-16	"	1617045	X
7439-92-1	Lead	**0.00089**		mg/l	0.00025	0.00002	1	"	"	"	"	"	X
7440-66-6	Zinc	**0.00843**		mg/l	0.00500	0.00072	1	"	03-Oct-16	06-Oct-16	"	1616918	X
General Chemistry Parameters													
7782-50-5	Total Residual Chlorine	< 0.020		mg/l	0.020	0.006	1	SM4500-Cl-G (11)	28-Sep-16 16:16	28-Sep-16 18:09	TY	1616715	X
Prepared by method SM4500-NH3 B (11)													
	Ammonia as N	**3.36**		mg/l	0.200	0.118	1	SM4500-NH3 C. (11)	30-Sep-16	04-Oct-16	EEM	1616848	X
	pH	**7.23**		pH Units			1	ASTM D 1293-99B	28-Sep-16 18:00	28-Sep-16 18:30	BD	1616735	X
	Salinity	**6.20**		ppt (1000)	1.00	0.144	1	SM 2520 (01)	10-Oct-16	10-Oct-16	BD	1617429	
	Total Solids	**7,400**		mg/l	50.0	15.3	1	SM2540 B (11)	30-Sep-16	06-Oct-16	CMB	1616834	
	Total Suspended Solids	**11.0**		mg/l	0.7	0.2	1	SM2540D (11)	29-Sep-16	29-Sep-16	CMB	1616778	X
	Total Organic Carbon	**9.03**		mg/l	1.00	0.246	1	SM5310B (00, 11)	07-Oct-16	07-Oct-16	RLT	1617303	X
Microbiological Analyses													
	Fecal Coliforms	**10**	D	CFU/100 ml			10	SM 9222D-97	28-Sep-16 16:34	28-Sep-16 16:34	VIA	1616722	X
Subcontracted analyses													
Prepared by method NA													
Analysis performed by GZA Geoenvironmental, Inc. - Manchester, CT -*													
	Aquatic Toxicity	**See report**						EPA-821-R-02-012		11-Oct-16		'[none]'	

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
Chelsea Creek	Gulf Chelsea	Surface Water	28-Sep-16 11:30	28-Sep-16
SC26446-01				

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Volatile Organic Compounds													
Volatile Organic Aromatics by SW846 8260 Prepared by method SW846 5030 Water MS													
71-43-2	Benzene	< 1.0		µg/l	1.0	0.3	1	SW846 8260C	29-Sep-16	29-Sep-16	GMA	1616774	
100-41-4	Ethylbenzene	< 1.0		µg/l	1.0	0.3	1	"	"	"	"	"	
91-20-3	Naphthalene	< 1.0		µg/l	1.0	0.3	1	"	"	"	"	"	
108-88-3	Toluene	< 1.0		µg/l	1.0	0.3	1	"	"	"	"	"	
179601-23-1	m,p-Xylene	< 2.0		µg/l	2.0	0.4	1	"	"	"	"	"	
95-47-6	o-Xylene	< 1.0		µg/l	1.0	0.5	1	"	"	"	"	"	
Surrogate recoveries:													
460-00-4	*4-Bromofluorobenzene*	*78*			*70-130 %*			"	"	"	"	"	
2037-26-5	*Toluene-d8*	*96*			*70-130 %*			"	"	"	"	"	
17060-07-0	*1,2-Dichloroethane-d4*	*127*			*70-130 %*			"	"	"	"	"	
1868-53-7	*Dibromofluoromethane*	*130*			*70-130 %*			"	"	"	"	"	
Semivolatile Organic Compounds by GCMS													
SVOCs by SIM Prepared by method SW846 3510C													
83-32-9	Acenaphthene	< 0.052		µg/l	0.052	0.032	1	SW846 8270D SIM	29-Sep-16	30-Sep-16	MSL	1616744	
208-96-8	Acenaphthylene	< 0.052		µg/l	0.052	0.033	1	"	"	"	"	"	
120-12-7	Anthracene	< 0.052		µg/l	0.052	0.028	1	"	"	"	"	"	
56-55-3	Benzo (a) anthracene	< 0.052		µg/l	0.052	0.025	1	"	"	"	"	"	
50-32-8	Benzo (a) pyrene	< 0.052		µg/l	0.052	0.038	1	"	"	"	"	"	
205-99-2	Benzo (b) fluoranthene	< 0.052		µg/l	0.052	0.036	1	"	"	"	"	"	
191-24-2	Benzo (g,h,i) perylene	< 0.052		µg/l	0.052	0.028	1	"	"	"	"	"	
207-08-9	Benzo (k) fluoranthene	< 0.052		µg/l	0.052	0.029	1	"	"	"	"	"	
218-01-9	Chrysene	< 0.052		µg/l	0.052	0.024	1	"	"	"	"	"	
53-70-3	Dibenzo (a,h) anthracene	< 0.052		µg/l	0.052	0.027	1	"	"	"	"	"	
206-44-0	Fluoranthene	< 0.052		µg/l	0.052	0.021	1	"	"	"	"	"	
86-73-7	Fluorene	< 0.052		µg/l	0.052	0.031	1	"	"	"	"	"	
193-39-5	Indeno (1,2,3-cd) pyrene	< 0.052		µg/l	0.052	0.022	1	"	"	"	"	"	
91-20-3	Naphthalene	**0.108**		µg/l	0.052	0.028	1	"	"	"	"	"	
85-01-8	Phenanthrene	**0.061**		µg/l	0.052	0.027	1	"	"	"	"	"	
129-00-0	Pyrene	< 0.052		µg/l	0.052	0.023	1	"	"	"	"	"	
Surrogate recoveries:													
205440-82-0	*Benzo (e) pyrene-d12*	*83*			*30-130 %*			"	"	"	"	"	
Total Metals by EPA 200/6000 Series Methods													
Prepared by method General Prep-Metal													
	Preservation	**Field Preserved; pH<2 confirmed**		N/A			1	EPA 200/6000 methods	28-Sep-16		BK	1616699	
Total Metals by EPA 200 Series Methods													
7440-43-9	Cadmium	< 0.00015	R01, U, D	mg/l	0.00100	0.00015	5	EPA 200.8	05-Oct-16	07-Oct-16	edt	1617045	X
7440-50-8	Copper	**0.0304**		mg/l	0.00050	0.00010	1	"	03-Oct-16	04-Oct-16	"	1616918	X
7440-02-0	Nickel	**0.00831**	R01, D	mg/l	0.00125	0.00023	5	"	05-Oct-16	07-Oct-16	"	1617045	X
7439-92-1	Lead	**0.00053**	R01, J, D	mg/l	0.00125	0.00011	5	"	"	"	"	"	X
7440-66-6	Zinc	**0.0197**		mg/l	0.00500	0.00072	1	"	03-Oct-16	06-Oct-16	"	1616918	X

Sample Identification	Client Project #	Matrix	Collection Date/Time	Received
Chelsea Creek SC26446-01	Gulf Chelsea	Surface Water	28-Sep-16 11:30	28-Sep-16

CAS No.	Analyte(s)	Result	Flag	Units	*RDL	MDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
General Chemistry Parameters													
7782-50-5	Total Residual Chlorine	< 0.020		mg/l	0.020	0.006	1	SM4500-Cl-G (11)	28-Sep-16 16:16	28-Sep-16 18:10	TY	1616715	X
Prepared by method SM4500-NH3 B (11)													
	Ammonia as N	**0.210**		mg/l	0.200	0.118	1	SM4500-NH3 C. (11)	30-Sep-16	04-Oct-16	EEM	1616848	X
	pH	**7.84**		pH Units			1	ASTM D 1293-99B	28-Sep-16 18:00	28-Sep-16 18:30	BD	1616735	X
	Salinity	**28.1**		ppt (1000)	1.00	0.144	1	SM 2520 (01)	10-Oct-16	10-Oct-16	BD	1617429	
	Total Solids	**34,100**		mg/l	500	153	1	SM2540 B (11)	30-Sep-16	06-Oct-16	CMB	1616834	
	Total Suspended Solids	**11.1**		mg/l	0.5	0.2	1	SM2540D (11)	29-Sep-16	29-Sep-16	CMB	1616778	X
	Total Organic Carbon	**9.17**		mg/l	1.00	0.246	1	SM5310B (00, 11)	07-Oct-16	07-Oct-16	RLT	1617303	X
Subcontracted analyses													
Prepared by method NA													
Analysis performed by GZA Geoenvironmental, Inc. - Manchester, CT -*													
	Aquatic Toxicity	**See report**						EPA-821-R-02-012		11-Oct-16		'[none]'	

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1616774 - SW846 5030 Water MS										
Blank (1616774-BLK1)					Prepared & Analyzed: 29-Sep-16					
Benzene	< 1.0		µg/l	1.0						
Benzene	< 1.0		µg/l	1.0						
Ethylbenzene	< 1.0		µg/l	1.0						
Ethylbenzene	< 1.0		µg/l	1.0						
Methyl tert-butyl ether	< 1.0		µg/l	1.0						
Methyl tert-butyl ether	< 1.0		µg/l	1.0						
Naphthalene	< 1.0		µg/l	1.0						
Naphthalene	< 1.0		µg/l	1.0						
Toluene	< 1.0		µg/l	1.0						
Toluene	< 1.0		µg/l	1.0						
m,p-Xylene	< 2.0		µg/l	2.0						
Vinyl chloride	< 1.0		µg/l	1.0						
m,p-Xylene	< 2.0		µg/l	2.0						
o-Xylene	< 1.0		µg/l	1.0						
o-Xylene	< 1.0		µg/l	1.0						
Tert-Butanol / butyl alcohol	< 10.0		µg/l	10.0						
Ethanol	< 200		µg/l	200						
Surrogate: 4-Bromofluorobenzene	*41.4*		µg/l		*50.0*		*83*	*70-130*		
Surrogate: 4-Bromofluorobenzene	*41.4*		µg/l		*50.0*		*83*	*70-130*		
Surrogate: Toluene-d8	*48.6*		µg/l		*50.0*		*97*	*70-130*		
Surrogate: Toluene-d8	*48.6*		µg/l		*50.0*		*97*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*58.9*		µg/l		*50.0*		*118*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*58.9*		µg/l		*50.0*		*118*	*70-130*		
Surrogate: Dibromofluoromethane	*61.0*		µg/l		*50.0*		*122*	*70-130*		
Surrogate: Dibromofluoromethane	*61.0*		µg/l		*50.0*		*122*	*70-130*		
LCS (1616774-BS1)					Prepared & Analyzed: 29-Sep-16					
Benzene	**20.3**		µg/l		20.0		102	70-130		
Benzene	**20.3**		µg/l		20.0		102	70-130		
Ethylbenzene	**18.1**		µg/l		20.0		90	70-130		
Ethylbenzene	**18.1**		µg/l		20.0		90	70-130		
Methyl tert-butyl ether	**20.2**		µg/l		20.0		101	70-130		
Methyl tert-butyl ether	**20.2**		µg/l		20.0		101	70-130		
Naphthalene	**17.1**		µg/l		20.0		85	70-130		
Naphthalene	**17.1**		µg/l		20.0		85	70-130		
Toluene	**19.4**		µg/l		20.0		97	70-130		
Toluene	**19.4**		µg/l		20.0		97	70-130		
Vinyl chloride	**22.4**		µg/l		20.0		112	70-130		
m,p-Xylene	**17.9**		µg/l		20.0		89	70-130		
m,p-Xylene	**17.9**		µg/l		20.0		89	70-130		
o-Xylene	**18.6**		µg/l		20.0		93	70-130		
o-Xylene	**18.6**		µg/l		20.0		93	70-130		
Tert-Butanol / butyl alcohol	**205**		µg/l		200		102	70-130		
Ethanol	**327**		µg/l		400		82	70-130		
Surrogate: 4-Bromofluorobenzene	*51.3*		µg/l		*50.0*		*103*	*70-130*		
Surrogate: 4-Bromofluorobenzene	*51.3*		µg/l		*50.0*		*103*	*70-130*		
Surrogate: Toluene-d8	*48.6*		µg/l		*50.0*		*97*	*70-130*		
Surrogate: Toluene-d8	*48.6*		µg/l		*50.0*		*97*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*51.1*		µg/l		*50.0*		*102*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*51.1*		µg/l		*50.0*		*102*	*70-130*		
Surrogate: Dibromofluoromethane	*54.1*		µg/l		*50.0*		*108*	*70-130*		
Surrogate: Dibromofluoromethane	*54.1*		µg/l		*50.0*		*108*	*70-130*		

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1616774 - SW846 5030 Water MS										
LCS Dup (1616774-BSD1)					Prepared & Analyzed: 29-Sep-16					
Benzene	**20.6**		µg/l		20.0		103	70-130	2	20
Benzene	**20.6**		µg/l		20.0		103	70-130	2	20
Ethylbenzene	**18.1**		µg/l		20.0		91	70-130	0.3	20
Ethylbenzene	**18.1**		µg/l		20.0		91	70-130	0.3	20
Methyl tert-butyl ether	**21.2**		µg/l		20.0		106	70-130	5	20
Methyl tert-butyl ether	**21.2**		µg/l		20.0		106	70-130	5	20
Naphthalene	**17.0**		µg/l		20.0		85	70-130	0.2	20
Naphthalene	**17.0**		µg/l		20.0		85	70-130	0.2	20
Toluene	**19.0**		µg/l		20.0		95	70-130	2	20
Toluene	**19.0**		µg/l		20.0		95	70-130	2	20
Vinyl chloride	**22.4**		µg/l		20.0		112	70-130	0	20
m,p-Xylene	**17.8**		µg/l		20.0		89	70-130	0.1	20
o-Xylene	**18.9**		µg/l		20.0		94	70-130	1	20
m,p-Xylene	**17.8**		µg/l		20.0		89	70-130	0.1	20
o-Xylene	**18.9**		µg/l		20.0		94	70-130	1	20
Tert-Butanol / butyl alcohol	**227**		µg/l		200		113	70-130	10	20
Ethanol	**324**		µg/l		400		81	70-130	0.8	20
Surrogate: 4-Bromofluorobenzene	*51.0*		µg/l		*50.0*		*102*	*70-130*		
Surrogate: 4-Bromofluorobenzene	*51.0*		µg/l		*50.0*		*102*	*70-130*		
Surrogate: Toluene-d8	*47.7*		µg/l		*50.0*		*95*	*70-130*		
Surrogate: Toluene-d8	*47.7*		µg/l		*50.0*		*95*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*51.6*		µg/l		*50.0*		*103*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4	*51.6*		µg/l		*50.0*		*103*	*70-130*		
Surrogate: Dibromofluoromethane	*54.1*		µg/l		*50.0*		*108*	*70-130*		
Surrogate: Dibromofluoromethane	*54.1*		µg/l		*50.0*		*108*	*70-130*		

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1616744 - SW846 3510C										
Blank (1616744-BLK1)					Prepared & Analyzed: 29-Sep-16					
Benzoic acid	< 1.99	U	µg/l	1.99						
4-Chloro-3-methylphenol	< 1.23	U	µg/l	1.23						
2-Chlorophenol	< 1.26	U	µg/l	1.26						
2,4-Dichlorophenol	< 1.21	U	µg/l	1.21						
2,4-Dimethylphenol	< 1.41	U	µg/l	1.41						
4,6-Dinitro-2-methylphenol	< 1.87	U	µg/l	1.87						
2,4-Dinitrophenol	< 2.15	U	µg/l	2.15						
2-Methylphenol	< 1.45	U	µg/l	1.45						
3 & 4-Methylphenol	< 1.45	U	µg/l	1.45						
2-Nitrophenol	< 1.45	U	µg/l	1.45						
4-Nitrophenol	< 2.92	U	µg/l	2.92						
Pentachlorophenol	< 1.87	U	µg/l	1.87						
Phenol	< 0.983	U	µg/l	0.983						
2,4,5-Trichlorophenol	< 1.19	U	µg/l	1.19						
2,4,6-Trichlorophenol	< 1.08	U	µg/l	1.08						
Surrogate: 2-Fluorophenol	*47.8*		µg/l		*50.0*		*96*	*15-110*		
Surrogate: Phenol-d5	*44.3*		µg/l		*50.0*		*89*	*15-110*		
Blank (1616744-BLK2)					Prepared & Analyzed: 29-Sep-16					
Acenaphthene	< 0.050		µg/l	0.050						
Acenaphthylene	< 0.050		µg/l	0.050						
Anthracene	< 0.050		µg/l	0.050						
Benzo (a) anthracene	< 0.050		µg/l	0.050						
Benzo (a) pyrene	< 0.050		µg/l	0.050						
Benzo (b) fluoranthene	< 0.050		µg/l	0.050						
Benzo (g,h,i) perylene	< 0.050		µg/l	0.050						
Benzo (k) fluoranthene	< 0.050		µg/l	0.050						
Chrysene	< 0.050		µg/l	0.050						
Dibenzo (a,h) anthracene	< 0.050		µg/l	0.050						
Fluoranthene	< 0.050		µg/l	0.050						
Fluorene	< 0.050		µg/l	0.050						
Indeno (1,2,3-cd) pyrene	< 0.050		µg/l	0.050						
Naphthalene	< 0.050		µg/l	0.050						
Phenanthrene	< 0.050		µg/l	0.050						
Pyrene	< 0.050		µg/l	0.050						
Surrogate: Benzo (e) pyrene-d12	*0.960*		µg/l		*1.00*		*96*	*30-130*		
LCS (1616744-BS1)					Prepared & Analyzed: 29-Sep-16					
Benzoic acid	**20.6**		µg/l	1.99	50.0		41	30-130		
4-Chloro-3-methylphenol	**42.5**		µg/l	1.23	50.0		85	30-130		
2-Chlorophenol	**41.4**		µg/l	1.26	50.0		83	30-130		
2,4-Dichlorophenol	**41.4**		µg/l	1.21	50.0		83	30-130		
2,4-Dimethylphenol	**39.2**		µg/l	1.41	50.0		78	30-130		
4,6-Dinitro-2-methylphenol	**41.9**		µg/l	1.87	50.0		84	30-130		
2,4-Dinitrophenol	**32.6**		µg/l	2.15	50.0		65	30-130		
2-Methylphenol	**41.7**		µg/l	1.45	50.0		83	30-130		
3 & 4-Methylphenol	**47.1**		µg/l	1.45	50.0		94	30-130		
2-Nitrophenol	**42.0**		µg/l	1.45	50.0		84	30-130		
4-Nitrophenol	**30.9**		µg/l	2.92	50.0		62	30-130		
Pentachlorophenol	**18.8**		µg/l	1.87	50.0		38	30-130		
Phenol	**41.8**		µg/l	0.983	50.0		84	30-130		
2,4,5-Trichlorophenol	**41.3**		µg/l	1.19	50.0		83	30-130		
2,4,6-Trichlorophenol	**39.4**		µg/l	1.08	50.0		79	30-130		

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1616744 - SW846 3510C										
LCS (1616744-BS1)					Prepared & Analyzed: 29-Sep-16					
Surrogate: 2-Fluorophenol	*42.9*		µg/l		*50.0*		*86*	*15-110*		
Surrogate: Phenol-d5	*47.8*		µg/l		*50.0*		*96*	*15-110*		
LCS (1616744-BS2)					Prepared & Analyzed: 29-Sep-16					
Acenaphthene	**0.808**		µg/l	0.050	1.00		81	40-140		
Acenaphthylene	**0.852**		µg/l	0.050	1.00		85	40-140		
Anthracene	**0.826**		µg/l	0.050	1.00		83	40-140		
Benzo (a) anthracene	**0.960**		µg/l	0.050	1.00		96	40-140		
Benzo (a) pyrene	**1.00**		µg/l	0.050	1.00		100	40-140		
Benzo (b) fluoranthene	**0.994**		µg/l	0.050	1.00		99	40-140		
Benzo (g,h,i) perylene	**0.950**		µg/l	0.050	1.00		95	40-140		
Benzo (k) fluoranthene	**1.07**		µg/l	0.050	1.00		107	40-140		
Chrysene	**0.938**		µg/l	0.050	1.00		94	40-140		
Dibenzo (a,h) anthracene	**1.02**		µg/l	0.050	1.00		102	40-140		
Fluoranthene	**0.864**		µg/l	0.050	1.00		86	40-140		
Fluorene	**0.858**		µg/l	0.050	1.00		86	40-140		
Indeno (1,2,3-cd) pyrene	**0.927**		µg/l	0.050	1.00		93	40-140		
Naphthalene	**0.699**		µg/l	0.050	1.00		70	40-140		
Phenanthrene	**0.757**		µg/l	0.050	1.00		76	40-140		
Pyrene	**0.976**		µg/l	0.050	1.00		98	40-140		
Surrogate: Benzo (e) pyrene-d12	*0.950*		µg/l		*1.00*		*95*	*30-130*		
LCS Dup (1616744-BSD1)					Prepared & Analyzed: 29-Sep-16					
Benzoic acid	**25.5**	QR2	µg/l	1.99	50.0		51	30-130	21	20
4-Chloro-3-methylphenol	**40.6**		µg/l	1.23	50.0		81	30-130	5	20
2-Chlorophenol	**39.0**		µg/l	1.26	50.0		78	30-130	6	20
2,4-Dichlorophenol	**40.5**		µg/l	1.21	50.0		81	30-130	2	20
2,4-Dimethylphenol	**40.6**		µg/l	1.41	50.0		81	30-130	3	20
4,6-Dinitro-2-methylphenol	**40.4**		µg/l	1.87	50.0		81	30-130	4	20
2,4-Dinitrophenol	**34.5**		µg/l	2.15	50.0		69	30-130	5	20
2-Methylphenol	**40.0**		µg/l	1.45	50.0		80	30-130	4	20
3 & 4-Methylphenol	**46.6**		µg/l	1.45	50.0		93	30-130	1	20
2-Nitrophenol	**43.1**		µg/l	1.45	50.0		86	30-130	3	20
4-Nitrophenol	**32.3**		µg/l	2.92	50.0		65	30-130	4	20
Pentachlorophenol	**19.3**		µg/l	1.87	50.0		39	30-130	3	20
Phenol	**41.3**		µg/l	0.983	50.0		83	30-130	1	20
2,4,5-Trichlorophenol	**41.5**		µg/l	1.19	50.0		83	30-130	0.5	20
2,4,6-Trichlorophenol	**38.0**		µg/l	1.08	50.0		76	30-130	4	20
Surrogate: 2-Fluorophenol	*42.3*		µg/l		*50.0*		*85*	*15-110*		
Surrogate: Phenol-d5	*48.2*		µg/l		*50.0*		*96*	*15-110*		
LCS Dup (1616744-BSD2)					Prepared & Analyzed: 29-Sep-16					
Acenaphthene	**0.663**		µg/l	0.050	1.00		66	40-140	20	20
Acenaphthylene	**0.700**		µg/l	0.050	1.00		70	40-140	20	20
Anthracene	**0.720**		µg/l	0.050	1.00		72	40-140	14	20
Benzo (a) anthracene	**0.828**		µg/l	0.050	1.00		83	40-140	15	20
Benzo (a) pyrene	**0.864**		µg/l	0.050	1.00		86	40-140	15	20
Benzo (b) fluoranthene	**0.884**		µg/l	0.050	1.00		88	40-140	12	20
Benzo (g,h,i) perylene	**0.821**		µg/l	0.050	1.00		82	40-140	15	20
Benzo (k) fluoranthene	**0.876**		µg/l	0.050	1.00		88	40-140	20	20
Chrysene	**0.812**		µg/l	0.050	1.00		81	40-140	14	20
Dibenzo (a,h) anthracene	**0.884**		µg/l	0.050	1.00		88	40-140	15	20
Fluoranthene	**0.751**		µg/l	0.050	1.00		75	40-140	14	20

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1616744 - SW846 3510C										
LCS Dup (1616744-BSD2)					Prepared & Analyzed: 29-Sep-16					
Fluorene	**0.728**		µg/l	0.050	1.00		73	40-140	16	20
Indeno (1,2,3-cd) pyrene	**0.787**		µg/l	0.050	1.00		79	40-140	16	20
Naphthalene	**0.568**	QR2	µg/l	0.050	1.00		57	40-140	21	20
Phenanthrene	**0.659**		µg/l	0.050	1.00		66	40-140	14	20
Pyrene	**0.830**		µg/l	0.050	1.00		83	40-140	16	20
Surrogate: Benzo (e) pyrene-d12	*0.870*		µg/l		*1.00*		*87*	*30-130*		

Extractable Petroleum Hydrocarbons - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1616827 - SW846 3510C										
Blank (1616827-BLK1)					Prepared & Analyzed: 30-Sep-16					
Oil & Grease	< 1.00		mg/l	1.00						
LCS (1616827-BS1)					Prepared & Analyzed: 30-Sep-16					
Oil & Grease	**59.7**		mg/l	1.00	68.6		87	83-101		

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1616918 - EPA 200 Series										
Blank (1616918-BLK1)						Prepared: 03-Oct-16 Analyzed: 06-Oct-16				
Zinc	**0.00344**	J	mg/l	0.00072						
Copper	< 0.00010	U	mg/l	0.00010						
Chromium	**0.00032**	J	mg/l	0.00027						
LCS (1616918-BS1)						Prepared: 03-Oct-16 Analyzed: 06-Oct-16				
Zinc	**0.106**	D	mg/l	0.00718	0.100		106	85-115		
Copper	**0.112**	D	mg/l	0.00096	0.100		112	85-115		
Chromium	**0.110**	D	mg/l	0.00266	0.100		110	85-115		
Duplicate (1616918-DUP1)			**Source: SC26445-01**			Prepared: 03-Oct-16 Analyzed: 06-Oct-16				
Zinc	**0.00886**		mg/l	0.00072		0.00843			5	20
Chromium	**0.00132**		mg/l	0.00027		0.00122			8	20
Copper	**0.0102**		mg/l	0.00010		0.0105			3	20
Matrix Spike (1616918-MS1)			**Source: SC26445-01**			Prepared: 03-Oct-16 Analyzed: 06-Oct-16				
Zinc	**0.112**	D	mg/l	0.00718	0.100	0.00843	104	70-130		
Copper	**0.105**	D	mg/l	0.00096	0.100	0.0105	94	70-130		
Chromium	**0.0989**	D	mg/l	0.00266	0.100	0.00122	98	70-130		
Post Spike (1616918-PS1)			**Source: SC26445-01**			Prepared: 03-Oct-16 Analyzed: 06-Oct-16				
Zinc	**0.103**	D	mg/l	0.00718	0.100	0.00843	95	85-115		
Chromium	**0.105**	D	mg/l	0.00266	0.100	0.00122	104	85-115		
Copper	**0.111**	D	mg/l	0.00096	0.100	0.0105	100	85-115		
Batch 1617045 - EPA 200 Series										
Blank (1617045-BLK1)						Prepared: 05-Oct-16 Analyzed: 07-Oct-16				
Lead	< 0.00002	U	mg/l	0.00002						
Nickel	< 0.00005	U	mg/l	0.00005						
Cadmium	< 0.00003	U	mg/l	0.00003						
LCS (1617045-BS1)						Prepared: 05-Oct-16 Analyzed: 07-Oct-16				
Lead	**0.0494**	D	mg/l	0.00022	0.0500		99	85-115		
Cadmium	**0.0520**	D	mg/l	0.00030	0.0500		104	85-115		
Nickel	**0.0507**	D	mg/l	0.00046	0.0500		101	85-115		
Duplicate (1617045-DUP1)			**Source: SC26446-01**			Prepared: 05-Oct-16 Analyzed: 07-Oct-16				
Lead	**0.00081**	QR8, R01, J, D	mg/l	0.00011		0.00053			42	20
Cadmium	< 0.00015	R01, U, D	mg/l	0.00015		BRL				20
Nickel	**0.00850**	R01, D	mg/l	0.00023		0.00831			2	20
Matrix Spike (1617045-MS1)			**Source: SC26446-01**			Prepared: 05-Oct-16 Analyzed: 07-Oct-16				
Lead	**0.0453**	D	mg/l	0.00022	0.0500	0.00053	90	70-130		
Cadmium	**0.0443**	D	mg/l	0.00030	0.0500	BRL	89	70-130		
Nickel	**0.0564**	D	mg/l	0.00046	0.0500	0.00831	96	70-130		
Post Spike (1617045-PS1)			**Source: SC26446-01**			Prepared: 05-Oct-16 Analyzed: 07-Oct-16				
Lead	**0.0472**	D	mg/l	0.00022	0.0500	0.00053	93	85-115		
Nickel	**0.0593**	D	mg/l	0.00046	0.0500	0.00831	102	85-115		
Cadmium	**0.0459**	D	mg/l	0.00030	0.0500	BRL	92	85-115		

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1616715 - General Preparation										
Blank (1616715-BLK1)					Prepared & Analyzed: 28-Sep-16					
Total Residual Chlorine	< 0.020		mg/l	0.020						
LCS (1616715-BS1)					Prepared & Analyzed: 28-Sep-16					
Total Residual Chlorine	**0.051**		mg/l	0.020	0.0500		101	90-110		
Duplicate (1616715-DUP1)			**Source: SC26446-01**		Prepared & Analyzed: 28-Sep-16					
Total Residual Chlorine	**0.014**	J	mg/l	0.020		0.014			0.7	20
Matrix Spike (1616715-MS1)			**Source: SC26446-01**		Prepared & Analyzed: 28-Sep-16					
Total Residual Chlorine	**0.029**	QM1	mg/l	0.020	0.0500	0.014	31	80-120		
Matrix Spike Dup (1616715-MSD1)			**Source: SC26446-01**		Prepared & Analyzed: 28-Sep-16					
Total Residual Chlorine	**0.028**	QM1	mg/l	0.020	0.0500	0.014	29	80-120	2	200
Reference (1616715-SRM1)					Prepared & Analyzed: 28-Sep-16					
Total Residual Chlorine	**0.107**		mg/l	0.020	0.112		96	85-115		
Batch 1616735 - General Preparation										
Duplicate (1616735-DUP1)			**Source: SC26446-01**		Prepared & Analyzed: 28-Sep-16					
pH	**7.86**		pH Units			7.84			0.3	5
Reference (1616735-SRM1)					Prepared & Analyzed: 28-Sep-16					
pH	**5.99**		pH Units		6.00		100	97.5-102.5		
Reference (1616735-SRM2)					Prepared & Analyzed: 28-Sep-16					
pH	**6.01**		pH Units		6.00		100	97.5-102.5		
Batch 1616778 - General Preparation										
Blank (1616778-BLK1)					Prepared & Analyzed: 29-Sep-16					
Total Suspended Solids	< 0.5		mg/l	0.5						
LCS (1616778-BS1)					Prepared & Analyzed: 29-Sep-16					
Total Suspended Solids	**96.0**		mg/l	10.0	100		96	90-110		
Batch 1616834 - General Preparation										
Blank (1616834-BLK1)					Prepared: 30-Sep-16 Analyzed: 06-Oct-16					
Total Solids	< 5.00		mg/l	5.00						
LCS (1616834-BS1)					Prepared: 30-Sep-16 Analyzed: 06-Oct-16					
Total Solids	**1110**		mg/l	10.0	1100		101	90-110		
Duplicate (1616834-DUP1)			**Source: SC26446-01**		Prepared: 30-Sep-16 Analyzed: 06-Oct-16					
Total Solids	**33100**		mg/l	500		34100			3	5
Batch 1616848 - General Preparation										
Blank (1616848-BLK1)					Prepared: 30-Sep-16 Analyzed: 04-Oct-16					
Ammonia as N	< 0.200		mg/l	0.200						
LCS (1616848-BS1)					Prepared: 30-Sep-16 Analyzed: 04-Oct-16					
Ammonia as N	**5.18**		mg/l	0.200	5.00		104	90-110		
Reference (1616848-SRM1)					Prepared: 30-Sep-16 Analyzed: 04-Oct-16					
Ammonia as N	**1.89**		mg/l	0.200	2.16		88	86-114		
Batch 1617303 - General Preparation										
Blank (1617303-BLK1)					Prepared & Analyzed: 07-Oct-16					
Total Organic Carbon	< 1.00		mg/l	1.00						
LCS (1617303-BS1)					Prepared & Analyzed: 07-Oct-16					
Total Organic Carbon	**14.8**		mg/l	1.00	15.0		99	85-115		
Reference (1617303-SRM1)					Prepared & Analyzed: 07-Oct-16					
Total Organic Carbon	**10.3**		mg/l	1.00	10.0		103	95-105		
Batch 1617429 - General Preparation										
Duplicate (1617429-DUP1)			**Source: SC26445-01**		Prepared & Analyzed: 10-Oct-16					
Salinity	**6.28**		ppt (1000)	1.00		6.20			1	10

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1617429 - General Preparation										
Reference (1617429-SRM1)					Prepared & Analyzed: 10-Oct-16					
Salinity	**10.1**		ppt (1000)	1.00	10.0		101	90-110		
Reference (1617429-SRM2)					Prepared & Analyzed: 10-Oct-16					
Salinity	**10.3**		ppt (1000)	1.00	10.0		103	90-110		

Notes and Definitions

D	Data reported from a dilution
J	Detected above the Method Detection Limit but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).
QM1	The spike recovery for this QC sample is outside of established control limits due to sample matrix interference.
QR2	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
QR8	Analyses are not controlled on RPD values from sample concentrations that are less than 5 times the reporting level. The batch is accepted based upon the difference between the sample and duplicate is less than or equal to the reporting limit.
R01	The Reporting Limit has been raised to account for matrix interference.
SGCMSVOC	Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogates with three required by program methods.
U	Analyte included in the analysis, but not detected at or above the MDL.
dry	Sample results reported on a dry weight basis
NR	Not Reported
RPD	Relative Percent Difference
ClHT	The method for residual chlorine indicates that samples should be analyzed immediately. 40 CFR 136 specifies a holding time of 15 minutes from sampling to analysis. Therefore all aqueous residual chlorine samples not analyzed in the field are considered out of hold time at the time of sample receipt.
OG	The required Matrix Spike and Matrix Spike Duplicate (MS/MSD) for Oil & Grease method 1664A can only be analyzed when the client has submitted sufficient sample volume. An extra liter per MS/MSD is required to fulfill the method QC criteria. Please refer to Chain of Custody and QC Summary (MS/MSD) of the Laboratory Report to verify ample sample volume was submitted to fulfill the requirement.
pH	The method for pH does not stipulate a specific holding time other than to state that the samples should be analyzed as soon as possible. For aqueous samples the 40 CFR 136 specifies a holding time of 15 minutes from sampling to analysis. Therefore all aqueous pH samples not analyzed in the field are considered out of hold time at the time of sample receipt. All soil samples are analyzed as soon as possible after sample receipt.
LIV	The initial volume for this sample has been reduced due to sample matrix and/or historical data therefore elevating the reporting limit.

ACUTE AQUATIC TOXICITY TEST REPORT

Gulf Oil Terminal
Chelsea, MA

Test Start Date: 9/29/16

Test Period: September 2016

Report Prepared by:

New England Bioassay
A Division of GZA GeoEnvironmental, Inc.
77 Batson Dr.
Manchester, CT 06042

NEB Project Number: 05.0045469.00

Report Date: October 11, 2016

Report Submitted to:

Eurofins Spectrum Analytical, Inc.
11 Almgren Drive
Agawam, MA 01001

Sample ID: SC26445-01/SC26446-01

If you have any questions concerning these results, please contact the Lab Manager, Kim Wills, at (860) 858-3153 or kimberly.wills@gza.com.

Whole Effluent Toxicity Testing Report Instruction Form

Client Name/Project: Spectrum / Gulf Oil Terminal Test Date: 9/29/16

Sample ID: SC26445-01/SC26446-01

Your results were as follows:

☒ Monitoring Only

□ Fail – Please proceed according to the instructions in your permit.

□ Invalid – **Retesting is still required. Retest report will be sent at a later date under separate cover.**

□ Original Test Invalid – **Valid retest performed. Both test and retest results are attached.**

□ Retesting will be or has been performed according to the Case 1 Protocols outlined in the attached copy of EPA-New England's species-specific, self-implementing policy for alternate dilution water.

□ This is your _____ case of dilution water toxicity. Please proceed according to the Case 2 Protocols outlined in the attached copy of EPA-New England's species-specific, self-implementing policy for alternate dilution water. The alternate dilution water you select for future tests for this species should be described as follows: "synthetic laboratory water made up according to EPA's toxicity test protocols, by adding specified amounts of salts into deionized water in order to match the hardness of our receiving water." Writing this letter should help you to avoid retests in the future.

□ Available information is insufficient to determine whether this test passed or failed. Please compare results to your permit limits. Please submit a current copy of your permit to the NEB Lab so that we can determine the status of future tests results and help ensure your compliance with permit requirements.

Please complete the items on this list before reporting these results according to the instructions in the "Monitoring and Reporting" Section of your permit.

- Please complete, sign and date the upper portion of the "Whole Effluent Toxicity Test Report Certification" page which is the page directly following this page.
- Fill in the Sample Type and Sample Method (upper right) and the Permit Limits (lower left) on the New England Bioassay - EPA Toxicity Test Summary Sheet(s) if they are incomplete.
- Fill in any missing information on the NEB Chain-of-Custody documents. This includes ensuring that the following information is recorded: Sampler's name and title, Facility name and address, Sample collection methods, Sample collection start and end dates and times, Types of sample, Chlorination status of samples upon shipment to NEB, Site description and Sample collection procedures.
- Monitoring results should be summarized on your monthly Discharge Monitoring Report Form.
- Signed and dated originals of this report must be submitted to the State (and Federal) Agencies specified in the "Monitoring and Reporting" section of your permit.

Questions? Please contact the Lab Manager, Kim Wills, at (860) 858-3153 or kimberly.wills@gza.com.

WHOLE EFFLUENT TOXICITY TEST REPORT CERTIFICATION (Permittee)

I certify under penalty of law that this document and all ATTACHMENTS were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Executed on _____ _____
[Date] [Authorized Signature]

_____
[Print or Type Name and Title]

_____
[Print or Type the Permittee's Name]

_____
[Print or Type the NPDES Permit No.]

Since the WET test and report check is complicated, the New England Bioassay Aquatic Toxicity Laboratory has certified the validity of the WET test data in the section below. Please note that this does not relieve the permittee from its responsibility to sign and certify the report under 40 C.F.R. S 122.41(k).

WHOLE EFFLUENT TOXICITY TEST REPORT CERTIFICATION (Bioassay Laboratory)

I certify under penalty of law that this document and all ATTACHMENTS were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Executed on 10/11/16 for Kim Wills
[Date] [Authorized Signature]

Kim Wills, Laboratory Manager
[Print or Type Name and Title]

New England Bioassay
[Print or Type Name of Bioassay Laboratory]

24. Telephone Contacts
If you have questions, please contact Joy Hilton, Water Technical Unit, at (617) 918-1877 or David McDonald, Ecosystem Assessment Unit, at (617) 918-8609.

NEW ENGLAND BIOASSAY, A DIVISION OF GZA EPA TEST SUMMARY SHEET

Facility Name: Gulf Oil Terminal Test Start Date: 9/29/16
NPDES Permit Number: MA0001091 Outfall Number: 003

Test Type	Test Species	Sample Type	Sample Method
X Acute	_ Fathead Minnow	_ Prechlorinated	X Grab
_ Chronic	_ Ceriodaphnia Dubia	_ Dechlorinated	_ Composite
_ Modified	_ Daphnia Pulex	_ Unchlorinated	_ Flow-thru
(Chronic reporting	X Mysid Shrimp	_ Chlorinated	_ Other
LC50 values)	_ Sheepshead		
_ 24-Hour Screening	_ Menidia		
	_ Sea Urchin	TRC conc. 0.019 mg/L	
	_ Selenastrum		
	_Other		

Dilution Water

X Receiving water collected at a point immediately upstream of or away from the discharge;
(Receiving water name and sampling location: Chelsea River)
_ Alternate Surface Water of known quality and a hardness to generally reflect the characteristics of the receiving water; (Surface water name:)
_ Synthetic water prepared using either Millipore Mill-Q or equivalent deionized water and reagent grade chemicals; or deionized water combined with mineral water;
_ Artificial sea salts mixed with deionized water;
_ Other

Effluent Sampling Date(s): 9/28/16

Effluent Concentrations Tested (in%): 0 6.25 12.5 25 50 100
* (Permit Limit Concentration): monitoring only

Was effluent salinity adjusted? Yes If yes, to what value? 25 ppt

Reference Toxicant test date: 9/7/16 Reference Toxicant Test Acceptable: Yes X No _

Age and Age Range of Test Organisms 4 days (< 24 hours) Source of Organisms NEB

TEST RESULTS &PERMIT LIMITS

Test Acceptability Criteria

A. Synthetic Water Control
Mean Control Survival: 100% Mean Control Reproduction: N/A
Mean Control Weight: N/A Mean Control % Fertilization: N/A

B. Receiving Water Control
Mean Control Survival: 100% Mean Control Reproduction: N/A
Mean Control Weight: N/A Mean Control % Fertilization: N/A

C. Lab Culture Control Yes_ No X

D. Thiosulfate Control Yes_ No X

Test Variability

Test PMSD (growth) N/A
Test PMSD (reproduction.) N/A

Permit Limits & Test Results

	Limits		Results
LC50	N/A	LC50	>100%
		Upper Value	±∞
		Lower Value	100%
		Data Analysis Method Used	Graphical
A-NOEC	N/A	A-NOEC	100%
C-NOEC	N/A	C-NOEC	N/A
		LOEC	N/A
IC25	N/A	IC25	-------
IC50	N/A	IC50	-------

PMSD Comparison Discussion – N/A

Concentration-Response Evaluation

The concentration-response relationship observed in this data set corresponds to the following item number in Chapter Four of "Method Guidance and Recommendations for Whole Effluent Toxicity (WET) Testing (40 CFR Part 136)", EPA 821-B-00-004, July 2000:

X 1. Ideal concentration-response relationship
_ 2. All or nothing response
_ 3. Stimulatory response at low concentrations and detrimental effects at higher concentrations
_ 4. Stimulation at low concentrations but no significant effect at higher concentrations
_ 5. Interrupted concentration-response: significant effects bracketed by non-significant effects
_ 6. Interrupted concentration-response: non-significant effects bracketed by significant effects
_ 7. Significant effects only at highest concentration
_ 8. Significant effects at all test concentrations but flat concentration-response curve
_ 9. Significant effects at all test concentrations with a sloped concentration-response curve
_ 10. Inverse concentration-response relationship

The concentration-response relationship was reviewed according to the above guidance document and the following determination was made:

X 1. Results are reliable and should be reported.
_ 2. Results are anomalous. An explanation is provided in the body of the report.
_ 3. Results are inconclusive and the test should be repeated with a newly collected sample. An explanation is provided in the body of the report.

NEW ENGLAND BIOASSAY, A DIVISION OF GZA EPA TEST SUMMARY SHEET

Facility Name: Gulf Oil Terminal Test Start Date: 9/29/16
NPDES Permit Number: MA0001091 Outfall Number: 003

Test Type	Test Species	Sample Type	Sample Method
X Acute	_ Fathead Minnow	_ Prechlorinated	X Grab
_ Chronic	_ Ceriodaphnia Dubia	_ Dechlorinated	_ Composite
_ Modified	_ Daphnia Pulex	_ Unchlorinated	_ Flow-thru
(Chronic reporting	_ Mysid Shrimp	_ Chlorinated	_ Other
LC50 values)	_ Sheepshead		
_ 24-Hour Screening	X Menidia		
	_ Sea Urchin	TRC conc. 0.019 mg/L	
	_ Selenastrum		
	_Other_____		

Dilution Water

X Receiving water collected at a point immediately upstream of or away from the discharge;
(Receiving water name and sampling location: Chelsea River)
_ Alternate Surface Water of known quality and a hardness to generally reflect the characteristics of the receiving water; (Surface water name:_____)
_ Synthetic water prepared using either Millipore Mill-Q or equivalent deionized water and reagent grade chemicals; or deionized water combined with mineral water;
_ Artificial sea salts mixed with deionized water;
_ Other_____

Effluent Sampling Date(s): 9/28/16

Effluent Concentrations Tested (in%): 0 6.25 12.5 25 50 100
* (Permit Limit Concentration): monitoring only

Was effluent salinity adjusted? Yes If yes, to what value? 25 ppt

Reference Toxicant test date: 9/8/16 Reference Toxicant Test Acceptable: Yes X No _

Age and Age Range of Test Organisms 11 days (<24 hours) Source of Organisms AI

TEST RESULTS &PERMIT LIMITS

Test Acceptability Criteria

A. Synthetic Water Control
Mean Control Survival: 97.5% Mean Control Reproduction: N/A
Mean Control Weight: N/A Mean Control % Fertilization: N/A

B. Receiving Water Control
Mean Control Survival: 100% Mean Control Reproduction: N/A
Mean Control Weight: N/A Mean Control % Fertilization: N/A

C. Lab Culture Control Yes_ No X

D. Thiosulfate Control Yes_ No X

Test Variability

Test PMSD (growth) N/A
Test PMSD (reproduction.) N/A

Permit Limits & Test Results

	Limits		Results
LC50	N/A	LC50	>100%
		Upper Value	±∞
		Lower Value	100%
		Data Analysis Method Used	Graphical
A-NOEC	N/A	A-NOEC	100%
C-NOEC	N/A	C-NOEC	N/A
		LOEC	N/A
IC25	N/A	IC25	-------
IC50	N/A	IC50	-------

PMSD Comparison Discussion – N/A

Concentration-Response Evaluation

The concentration-response relationship observed in this data set corresponds to the following item number in Chapter Four of "Method Guidance and Recommendations for Whole Effluent Toxicity (WET) Testing (40 CFR Part 136)", EPA 821-B-00-004, July 2000:

X 1. Ideal concentration-response relationship
_ 2. All or nothing response
_ 3. Stimulatory response at low concentrations and detrimental effects at higher concentrations
_ 4. Stimulation at low concentrations but no significant effect at higher concentrations
_ 5. Interrupted concentration-response: significant effects bracketed by non-significant effects
_ 6. Interrupted concentration-response: non-significant effects bracketed by significant effects
_ 7. Significant effects only at highest concentration
_ 8. Significant effects at all test concentrations but flat concentration-response curve
_ 9. Significant effects at all test concentrations with a sloped concentration-response curve
_ 10. Inverse concentration-response relationship

The concentration-response relationship was reviewed according to the above guidance document and the following determination was made:

X 1. Results are reliable and should be reported.
_ 2. Results are anomalous. An explanation is provided in the body of the report.
_ 3. Results are inconclusive and the test should be repeated with a newly collected sample. An explanation is provided in the body of the report.

MYSIDOPSIS BAHIA AQUATIC TOXICITY TEST REPORT

Test Reference Manual:	EPA 821-R-02-012, "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater Organisms and Marine Organisms", Fifth Edition
Test Method:	*Mysidopsis bahia* Acute Toxicity Test – Method 2007.0
Test Type:	Acute Static Non-Renewal Saltwater Test
Salinity:	25 ppt ± 10% for all dilutions by dry ocean salts (Instant Ocean)
Temperature :	25 ± 1°C
Light Quality:	Ambient Laboratory Illumination
Photoperiod:	16 hours light, 8 hours dark
Test Chamber Size:	250 mL
Test Solution Volume:	Minimum 200 mL
Age of Test Organisms:	4 days
Number of Mysids Per Test Chamber:	10
Number of Replicate Test Chambers Per Treatment:	4
Total Number of Mysids Per Test Concentration:	40
Feeding Regime:	Light feeding using concentrated *Artemia* nauplii while holding prior to initiating the test.
Aeration:	Aerated at <100 bubbles/minute
Dilution Water:	Chelsea River
Alternate Control Water:	NEB Artificial Salt Water (salinity 25 ± 1 ppt)
Effluent Concentrations:	0%, 6.25%, 12.5%, 25%, 50% and 100% effluent
Test Duration:	48 hours
Effect measured:	Mortality – no movement of body appendages on gentle prodding.
Test Acceptability:	≥ 90% survival of test organisms in control solution Yes X No _
Sampling Requirements:	Samples first used within 36 hours of collection Yes X No _
Sample Volume Required:	Minimum 2 liters
Test Organism Source:	New England Bioassay

Test Acceptability Criteria: Mean Alternate Water Control Survival = 100%
Mean Dilution Water Control Survival = 100%

Test Results:	Limits	Results
48-hour LC50	N/A	>100%
Upper Value		±∞
Lower Value		100%
Data Analysis Method Used		Graphical
A-NOEC		100%

Reference Toxicant Data:

Date:	9/7/16
Toxicant:	Sodium Dodecyl Sulfate
Dilution Water:	NEB Artificial Salt Water
Toxicant Source:	New England Bioassay
Organism Source:	New England Bioassay
48-hour LC50:	17.6 mg/L
In Acceptable Range:	Yes X No _____

Dechlorination Procedures: Chlorine is measured using 4500 CL-G DPD Colorimetric Method.

X Dechlorination was not required.

_ Sample was dechlorinated by adding sodium thiosulfate to the sample prior to test initiation. Since dechlorination of the effluent was necessary, a thiosulfate control of diluent water spiked with sodium thiosulfate was also included in the test series. Chlorine was _____ mg/L in a dechlorinated sample.

_ Chlorine measurement was elevated due to interference. Chlorine was ___mg/ L in a filtered sample.

_ Total Residual Chlorine was re-measured following aeration, and was found to be _____ mg/L.

Additional Notes or Other Conditions Affecting the Test:

MENIDIA BERYLLINA AQUATIC TOXICITY TEST REPORT

Test Reference Manual:	EPA 821-R-02-012, "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater Organisms and Marine Organisms", Fifth Edition
Test Method:	*Menidia beryllina* Acute Toxicity Test – Method 2006.0
Test Type:	Acute Static Non-Renewal Saltwater Test
Salinity:	25 ppt ± 2 ppt by adding dry ocean salts (Instant Ocean)
Temperature :	25 ± 1°C
Light Quality:	Ambient Laboratory Illumination
Photoperiod:	16 hours light, 8 hours dark
Test Chamber Size:	250 mL
Test Solution Volume:	Minimum 200 mL/replicate
Age of Test Organisms:	11 days old (24 hour age range)
Number of Fish Per Test Chamber:	10
Number of Replicate Test Chambers Per Treatment:	4
Total Number of Organisms Per Test Concentration:	40
Feeding Regime:	Light feeding using concentrated *Artemia* nauplii while holding prior to initiating the test.
Aeration:	Aerated at <100 bubbles/minute
Dilution Water:	Chelsea River
Alternate Control Water:	NEB Artificial Salt Water (salinity 25 ± 1 ppt)
Effluent Concentrations:	0%, 6.25%, 12.5%, 25%, 50% and 100% effluent
Test Duration:	48 hours
Effect measured:	Mortality – no movement on gentle prodding.
Test Acceptability:	≥ 90% survival of test organisms in control solution Yes X No _
Sampling Requirements:	Samples first used within 36 hours of collection Yes X No _
Sample Volume Required:	Minimum 2 liters
Test Organism Source:	Aquatic Indicators

Test Acceptability Criteria: Mean Alternate Water Control Survival = 97.5%
Mean Dilution Water Control Survival = 100%

Test Results:	Limits	Results
48-hour LC50	N/A	>100%
Upper Value		± ∞
Lower Value		100%
Data Analysis Method Used		Graphical
A-NOEC		100%

Reference Toxicant Data:

Date:	9/8/16
Toxicant:	Sodium Dodecyl Sulfate
Dilution Water:	NEB Artificial Salt Water
Toxicant Source:	New England Bioassay
Organism Source:	Aquatic Indicators
48-hour LC50:	8.66 mg/L
In Acceptable Range:	Yes X No

Dechlorination Procedures: Chlorine is measured using 4500 CL-G DPD Colorimetric Method.

X Dechlorination was not required.

_ Sample was dechlorinated by adding sodium thiosulfate to the sample prior to test initiation. Since dechlorination of the effluent was necessary, a thiosulfate control of diluent water spiked with sodium thiosulfate was also included in the test series. Chlorine was _____ mg/L in a dechlorinated sample.

_ Chlorine measurement was elevated due to interference. Chlorine was _____ mg/L in a filtered sample.

_ Total Residual Chlorine was re-measured following aeration, and was found to be _____ mg/L.

Additional Notes or Other Conditions Affecting the Test:

NEW ENGLAND BIOASSAY ACUTE TOXICITY DATA FORM
COVER SHEET FOR LC50 TESTS

CLIENT:	Eurofins Spectrum Analytical	*M.bahia* TEST ID #	16-1436a
ADDRESS:	11 Almgren Drive	*M.beryllina* TEST ID #	16-1436b
	Agawam, MA 01001	COC #	C36-3439/40
SAMPLE TYPE:	Gulf Oil Terminal Outfall 003	PROJECT #	05.0045469.00
DILUTION WATER:	Chelsea River		

Sample Date(s): 9/28/16 Received On: 9/29/16

INVERTEBRATES

TEST SET UP (TECH INIT)	CB
TEST SPECIES	*Mysidopsis bahia*
NEB LOT#	Mb16 (9-25)
AGE	4 days
TEST SOLUTION VOLUME (mls)	200
NO. ORGANISMS PER TEST CHAMBER	10
NO. ORGANISMS PER CONCENTRATION	40
NO. ORGANISMS PER CONTROL	40

	DATE	TIME
TEST START:	9/29/16	1208
TEST END:	10/1/16	1131

VERTEBRATES

TEST SET UP (TECH INIT)	CB
TEST SPECIES	*Menidia beryllina*
NEB LOT#	Ss16AI (9-27)
AGE	11 days
TEST SOLUTION VOLUME (mls)	700
NO. ORGANISMS PER TEST CHAMBER	10
NO. ORGANISMS PER CONCENTRATION	40
NO. ORGANISMS PER CONTROL	40

	DATE	TIME
TEST START:	9/29/16	1236
TEST END:	10/1/16	1139

LABORATORY CONTROL WATER:

			Salinity (ppt)	Alkalinity (mg/L $CaCO_3$)
ARTIFICIAL SW:	NEB BATCH#	CRI036-030	24	120

RESULTS OF *Mysidopsis bahia* LC50 TEST

METHOD	LC50 (%)	95% Confidence Limits
BINOMIAL/GRAPHICAL	>100%	100%±∞
PROBIT		
SPEARMAN KARBER		
NOAEL	100%	

RESULTS OF *Menidia beryllina* LC50 TEST

METHOD	LC50 (%)	95% Confidence Limits
BINOMIAL/GRAPHICAL	>100%	100%±∞
PROBIT		
SPEARMAN KARBER		
NOAEL	100%	

NOEC: NO OBSERVABLE EFFECT CONCENTRATION

Comments: 299g instant oxean added to about 10L effluent to bring salinity to 24 ppt.
12.5L of diluent was brought up to 16L with D.I. water to bring salinity to 25 ppt

REVIEWD BY: DATE: 10/11/16

NEW ENGLAND BIOASSAY
Toxicity Test Data Sheet

NEB Test #: 16-1436a
Project #: 05.0045469.00
Facility Name: Gulf Oil Terminal
Date Sampled: 9/28/16
Date Received: 9/29/16
Sample ID: Outfall 003

Test Organism: *Mysidopsis bahia*
Organism Age: 4 days
Test Duration: 48 (hours)
Beginning Date: 9/29/16 Time: 1208
Dilution Water Source: Chelsea River
Salinity: 25 ppt

Effluent Conc. %	Number of Surviving Organisms			Dissolved Oxygen (mg/L)			Temperature (°C)			pH (su)			Salinity (ppt)		
Initials	CB	CB	CW	CB	CB	CW	CB	CB	CW	CB	CB	CW	CB	CB	CW
	0	24	48	0	24	48	0	24	48	0	24	48	0	24	48
Control A	10	10	10	7.4	6.6	5.9	25.1	24.4	24.6	7.9	8.0	7.8	25	25	26
Control B	10	10	10		6.5	4.9		24.7	24.8		8.1	7.8		25	26
Control C	10	10	10		6.5	4.9		24.9	24.8		8.1	7.8		25	25
Control D	10	10	10		6.4	4.6		24.9	25.0		8.1	7.8		25	25
Diluent A	10	10	10	7.3	6.2	4.2	25.1	25.1	25.1	7.7	7.8	7.4	25	25	25
Diluent B	10	10	10		6.0	3.3		25.1	25.2		7.8	7.4		25	25
Diluent C	10	10	10		6.3	3.4		24.9	25.0		7.8	7.5		25	25
Diluent D	10	10	10		6.1	4.1		25.1	24.6		7.8	7.5		25	25
6.25 A	10	10	10	7.3	6.3	4.3	25.2	24.8	24.8	7.8	7.9	7.6	25	25	25
6.25 B	10	10	10		6.4	4.4		24.8	24.9		7.9	7.6		25	25
6.25 C	10	10	10		6.4	4.1		24.8	25.0		7.9	7.6		25	25
6.25 D	10	10	10		6.5	4.1		25.1	25.3		7.9	7.5		24	24
12.5 A	10	10	10	7.3	6.2	3.7	25.1	25.1	25.0	7.9	8.0	7.7	25	25	26
12.5 B	10	10	10		6.6	4.0		24.8	25.2		8.0	7.6		25	25
12.5 C	10	10	10		6.6	3.8		24.8	25.2		8.0	7.6		25	25
12.5 D	10	10	10		6.5	4.0		24.8	25.1		7.9	7.6		25	25
25 A	10	10	10	7.3	6.7	5.0	25.2	24.4	24.8	8.1	8.0	7.7	24	25	26
25 B	10	10	10		6.6	5.0		24.7	24.9		8.0	7.8		25	25
25 C	10	10	10		6.5	4.1		24.8	25.2		8.0	7.7		24	25
25 D	10	10	10		6.4	4.3		24.7	24.9		8.0	7.7		25	25

LC50	Confidence Interval	A-NOEC	Computational Method
>100%	100%±∞	100%	Graphical

NEW ENGLAND BIOASSAY
Toxicity Test Data Sheet

NEB Test #: 16-1436a
Project #: 05.0045469.00
Facility Name: Gulf Oil Terminal
Date Sampled: 9/28/16
Date Received: 9/29/16
Sample ID: Outfall 003

Test Organism: *Mysidopsis bahia*
Organism Age: 4 days
Test Duration: 48 (hours)
Beginning Date: 9/29/16 Time: 1208
Dilution Water Source: Chelsea River
Salinity: 25 ppt

Effluent Conc. %	Number of Surviving Organisms			Dissolved Oxygen (mg/L)			Temperature (°C)			pH (su)			Salinity (ppt)		
Initials	CB	CB	CW	CB	CB	CW	CB	CB	CW	CB	CB	CW	CB	CB	CW
	0	24	48	0	24	48	0	24	48	0	24	48	0	24	48
50 A	10	10	10	7.7	6.2	4.6	25.2	24.9	25.0	8.3	8.2	7.9	24	24	24
50 B	10	10	10		6.2	4.5		24.9	25.0		8.2	7.9		24	24
50 C	10	10	10		6.4	4.6		24.8	25.1		8.2	7.8		24	24
50 D	10	10	10		6.4	4.3		24.9	25.0		8.2	7.9		24	24
100 A	10	10	10	8.8	6.5	4.6	25.3	24.7	24.8	8.6	8.4	8.1	23	24	25
100 B	10	10	9		6.5	4.9		24.7	24.9		8.4	8.1		24	24
100 C	10	10	10		6.6	4.9		24.7	24.9		8.4	8.1		24	24
100 D	10	10	10		6.6	4.9		25.0	24.9		8.5	8.2		24	24

LC50	Confidence Interval	A-NOEC	Computational Method
>100%	100%±∞	100%	Graphical

Mysidopsis 96-h Acute Survival Test — **New England Bioassay**

Analysis ID:	07-6169-9501	**Endpoint:**	48h Survival Rate	**CETIS Version:**	CETISv1.9.2
Analyzed:	10 Oct-16 17:14	**Analysis:**	Linear Interpolation (ICPIN)	**Official Results:**	Yes
Batch ID:	05-9665-5259	**Test Type:**	Survival (48h)	**Analyst:**	
Start Date:	29 Sep-16 12:08	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Receiving Water
Ending Date:	01 Oct-16 11:31	**Species:**	Mysidopsis bahia	**Brine:**	
Duration:	47h	**Source:**	In-House Culture	**Age:**	4d
Sample ID:	06-6895-1136	**Code:**	27DF6260	**Client:**	Spectrum Analytical
Sample Date:	28 Sep-16	**Material:**	Not Applicable	**Project:**	
Receipt Date:	29 Sep-16	**Source:**	Gulf Oil Terminal (MA0001091)		
Sample Age:	36h	**Station:**			

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Log(X)	Linear	1086155	200	Yes	Two-Point Interpolation

Point Estimates

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
LC50	>100	n/a	n/a	<1	n/a	n/a

48h Survival Rate Summary — Calculated Variate(A/B)

Conc-%	Code	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B
0	D	4	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.0%	40	40
6.25		4	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.0%	40	40
12.5		4	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.0%	40	40
25		4	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.0%	40	40
50		4	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.0%	40	40
100		4	0.9750	0.9000	1.0000	0.0250	0.0500	5.13%	2.5%	39	40

48h Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	1.0000	1.0000	1.0000	1.0000
6.25		1.0000	1.0000	1.0000	1.0000
12.5		1.0000	1.0000	1.0000	1.0000
25		1.0000	1.0000	1.0000	1.0000
50		1.0000	1.0000	1.0000	1.0000
100		1.0000	0.9000	1.0000	1.0000

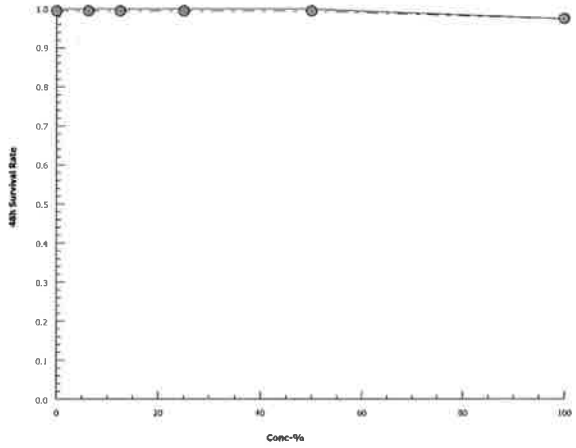
48h Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	10/10	10/10	10/10	10/10
6.25		10/10	10/10	10/10	10/10
12.5		10/10	10/10	10/10	10/10
25		10/10	10/10	10/10	10/10
50		10/10	10/10	10/10	10/10
100		10/10	9/10	10/10	10/10

Mysidopsis 96-h Acute Survival Test **New England Bioassay**

Analysis ID:	07-6169-9501	**Endpoint:**	48h Survival Rate	**CETIS Version:**	CETISv1.9.2
Analyzed:	10 Oct-16 17:14	**Analysis:**	Linear Interpolation (ICPIN)	**Official Results:**	Yes

Graphics



Mysidopsis 96-h Acute Survival Test — **New England Bioassay**

Analysis ID:	10-0669-0089	**Endpoint:**	48h Survival Rate	**CETIS Version:**	CETISv1.9.2
Analyzed:	10 Oct-16 17:14	**Analysis:**	Nonparametric-Control vs Treatments	**Official Results:**	Yes
Batch ID:	05-9665-5259	**Test Type:**	Survival (48h)	**Analyst:**	
Start Date:	29 Sep-16 12:08	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Receiving Water
Ending Date:	01 Oct-16 11:31	**Species:**	Mysidopsis bahia	**Brine:**	
Duration:	47h	**Source:**	In-House Culture	**Age:**	4d
Sample ID:	06-6895-1136	**Code:**	27DF6260	**Client:**	Spectrum Analytical
Sample Date:	28 Sep-16	**Material:**	Not Applicable	**Project:**	
Receipt Date:	29 Sep-16	**Source:**	Gulf Oil Terminal (MA0001091)		
Sample Age:	36h	**Station:**			

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU	PMSD
Angular (Corrected)	C > T	100	> 100	n/a	1	4.57%

Steel Many-One Rank Sum Test

Control	vs	Conc-%	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(α:5%)
Dilution Water		6.25	18	10	1	6	Asymp	0.8333	Non-Significant Effect
		12.5	18	10	1	6	Asymp	0.8333	Non-Significant Effect
		25	18	10	1	6	Asymp	0.8333	Non-Significant Effect
		50	18	10	1	6	Asymp	0.8333	Non-Significant Effect
		100	16	10	1	6	Asymp	0.6105	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0.0055332	0.0011066	5	1	0.4457	Non-Significant Effect
Error	0.0199195	0.0011066	18			
Total	0.0254527		23			

Distributional Tests

Attribute	Test	Test Stat	Critical	P-Value	Decision(α:1%)
Variances	Levene Equality of Variance Test	9	4.248	2.0E-04	Unequal Variances
Variances	Mod Levene Equality of Variance Test	1	4.248	0.4457	Equal Variances
Distribution	Shapiro-Wilk W Normality Test	0.4634	0.884	2.5E-08	Non-Normal Distribution

48h Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	D	4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
6.25		4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
12.5		4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
25		4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
50		4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
100		4	0.9750	0.8954	1.0000	1.0000	0.9000	1.0000	0.0250	5.13%	2.50%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	D	4	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	0.00%
6.25		4	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	0.00%
12.5		4	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	0.00%
25		4	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	0.00%
50		4	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	0.00%
100		4	1.371	1.242	1.501	1.412	1.249	1.412	0.04074	5.94%	2.89%

Mysidopsis 96-h Acute Survival Test — **New England Bioassay**

Analysis ID:	10-0669-0089	**Endpoint:**	48h Survival Rate	**CETIS Version:**	CETISv1.9.2
Analyzed:	10 Oct-16 17:14	**Analysis:**	Nonparametric-Control vs Treatments	**Official Results:**	Yes

48h Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	1.0000	1.0000	1.0000	1.0000
6.25		1.0000	1.0000	1.0000	1.0000
12.5		1.0000	1.0000	1.0000	1.0000
25		1.0000	1.0000	1.0000	1.0000
50		1.0000	1.0000	1.0000	1.0000
100		1.0000	0.9000	1.0000	1.0000

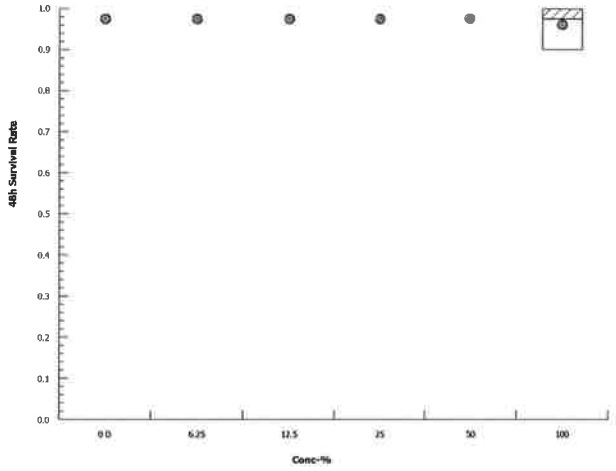
Angular (Corrected) Transformed Detail

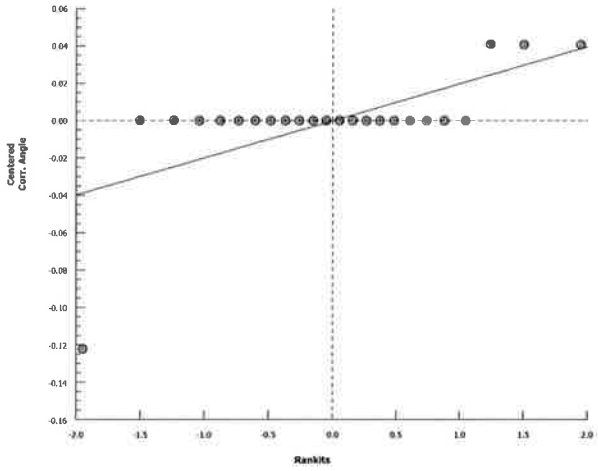
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	1.412	1.412	1.412	1.412
6.25		1.412	1.412	1.412	1.412
12.5		1.412	1.412	1.412	1.412
25		1.412	1.412	1.412	1.412
50		1.412	1.412	1.412	1.412
100		1.412	1.249	1.412	1.412

48h Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	10/10	10/10	10/10	10/10
6.25		10/10	10/10	10/10	10/10
12.5		10/10	10/10	10/10	10/10
25		10/10	10/10	10/10	10/10
50		10/10	10/10	10/10	10/10
100		10/10	9/10	10/10	10/10

Graphics





NEW ENGLAND BIOASSAY
Toxicity Test Data Sheet

NEB Test #: 16-1436b
Project #: 05.0045469.00
Facility Name: Gulf Oil Terminal
Date Sampled: 9/28/16
Date Received: 9/29/16
Sample ID: Outfall 003

Test Organism: *Menidia beryllina*
Organism Age: 11 days
Test Duration: 48 (hours)
Beginning Date: 9/29/16 Time: 1236
Dilution Water Source: Chelsea River
Salinity: 25 ppt

Effluent Conc. %	Number of Surviving Organisms			Dissolved Oxygen (mg/L)			Temperature (°C)			pH (su)			Salinity (ppt)		
Initials	0	CB	CW	CB	CB	CW	CB	CB	CW	CB	CB	CW	CB	CB	CW
	0	24	48	0	24	48	0	24	48	0	24	48	0	24	48
Control A	10	9	9	7.4	6.1	6.4	25.1	25.0	24.8	7.9	8.0	8.0	25	25	25
Control B	10	10	10		6.0	6.2		25.0	25.1		8.1	8.1		25	25
Control C	10	10	10		6.1	6.1		24.9	25.2		8.1	8.1		25	25
Control D	10	10	10		6.1	6.1		24.9	25.1		8.1	8.1		25	25
Diluent A	10	10	10	7.3	6.2	6.0	25.1	24.8	24.9	7.7	7.8	8.0	25	25	25
Diluent B	10	10	10		6.2	6.2		24.8	24.9		7.8	7.9		25	25
Diluent C	10	10	10		6.3	6.2		24.8	25.0		7.8	7.9		25	25
Diluent D	10	10	10		6.2	6.1		24.8	25.0		7.8	7.9		25	25
6.25 A	10	10	10	7.3	5.8	6.2	25.2	25.3	25.0	7.8	7.8	7.9	25	24	25
6.25 B	10	10	10		5.9	6.0		25.3	25.3		7.8	7.9		24	24
6.25 C	10	10	10		6.0	5.9		25.3	25.3		7.8	7.9		24	24
6.25 D	10	10	10		6.0	5.9		25.4	25.4		7.8	7.9		24	24
12.5 A	10	10	10	7.3	5.9	5.8	25.1	25.3	25.3	7.9	7.9	7.9	25	24	24
12.5 B	10	10	10		5.9	5.9		25.3	25.4		7.9	7.8		24	24
12.5 C	10	10	10		5.8	5.9		25.4	25.5		7.9	7.9		24	24
12.5 D	10	10	10		5.9	5.8		25.4	25.4		7.9	7.9		24	24
25 A	10	10	10	7.3	5.8	6.2	25.2	25.4	25.3	8.1	8.0	8.0	24	24	24
25 B	10	10	10		5.8	6.0		25.3	25.4		8.1	8.0		24	24
25 C	10	10	10		5.9	6.0		25.4	25.4		8.0	8.0		24	24
25 D	10	10	10		5.9	6.0		25.4	25.1		8.0	8.0		24	24

LC50	Confidence Interval	A-NOEC	Computational Method
>100%	100%±∞	100%	Graphical

NEW ENGLAND BIOASSAY
Toxicity Test Data Sheet

NEB Test #: 16-1436b
Project #: 05.0045469.00
Facility Name: Gulf Oil Terminal
Date Sampled: 9/28/16
Date Received: 9/29/16
Sample ID: Outfall 003

Test Organism: *Menidia beryllina*
Organism Age: 11 days
Test Duration: 48 (hours)
Beginning Date: 9/29/16 Time: 1236
Dilution Water Source: Chelsea River
Salinity: 25 ppt

Effluent Conc. %	Number of Surviving Organisms			Dissolved Oxygen (mg/L)			Temperature (°C)			pH (su)			Salinity (ppt)		
Initials	0	CB	CW	CB	CB	CW	CB	CB	CW	CB	CB	CW	CB	CB	CW
	0	24	48	0	24	48	0	24	48	0	24	48	0	24	48
50 A	10	10	10	7.7	5.9	6.2	25.2	25.4	25.2	8.3	8.2	8.1	24	24	24
50 B	10	10	10		5.8	5.8		25.3	25.3		8.2	8.1		24	24
50 C	10	10	10		5.8	5.7		25.4	25.3		8.2	8.1		24	24
50 D	10	10	10		6.0	6.1		25.2	25.0		8.2	8.1		24	24
100 A	10	10	10	8.8	6.3	6.1	25.3	24.9	25.0	8.6	8.5	8.4	23	24	24
100 B	10	10	10		6.2	6.1		25.0	25.2		8.5	8.3		24	24
100 C	10	10	10		6.2	6.0		25.0	25.3		8.5	8.4		23	24
100 D	10	10	10		6.2	6.1		25.0	25.0		8.5	8.4		23	24

LC50	Confidence Interval	A-NOEC	Computational Method
>100%	100%	100%	Graphical

Inland Silverside 96-h Acute Survival Test — **New England Bioassay**

Analysis ID:	19-4042-4689	**Endpoint:**	48h Survival Rate	**CETIS Version:**	CETISv1.9.2
Analyzed:	10 Oct-16 17:15	**Analysis:**	Linear Interpolation (ICPIN)	**Official Results:**	Yes
Batch ID:	06-6357-7749	**Test Type:**	Survival (48h)	**Analyst:**	
Start Date:	29 Sep-16 12:36	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Receiving Water
Ending Date:	01 Oct-16 11:39	**Species:**	Menidia beryllina	**Brine:**	
Duration:	47h	**Source:**	In-House Culture	**Age:**	11 d
Sample ID:	18-0858-1383	**Code:**	6BCCC307	**Client:**	Spectrum Analytical
Sample Date:	28 Sep-16	**Material:**	Not Applicable	**Project:**	
Receipt Date:	29 Sep-16	**Source:**	Gulf Oil Terminal (MA0001091)		
Sample Age:	37h	**Station:**			

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Log(X)	Linear	1085261	200	Yes	Two-Point Interpolation

Point Estimates

Level	%	95% LCL	95% UCL	TU	95% LCL	95% UCL
LC50	>100	n/a	n/a	<1	n/a	n/a

48h Survival Rate Summary — Calculated Variate(A/B)

Conc-%	Code	Count	Mean	Min	Max	Std Err	Std Dev	CV%	%Effect	A	B
0	D	4	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.0%	40	40
6.25		4	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.0%	40	40
12.5		4	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.0%	40	40
25		4	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.0%	40	40
50		4	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.0%	40	40
100		4	1.0000	1.0000	1.0000	0.0000	0.0000	0.00%	0.0%	40	40

48h Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	1.0000	1.0000	1.0000	1.0000
6.25		1.0000	1.0000	1.0000	1.0000
12.5		1.0000	1.0000	1.0000	1.0000
25		1.0000	1.0000	1.0000	1.0000
50		1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000

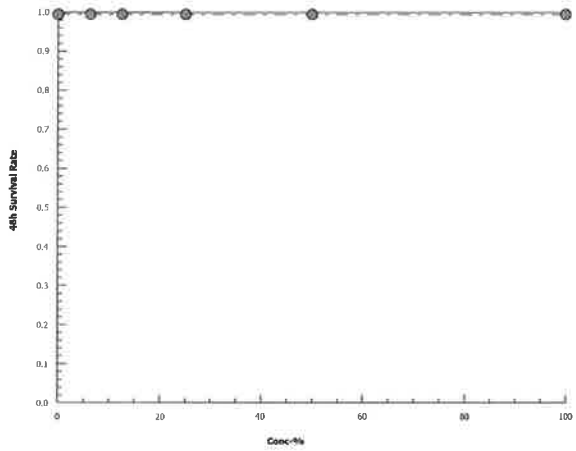
48h Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	10/10	10/10	10/10	10/10
6.25		10/10	10/10	10/10	10/10
12.5		10/10	10/10	10/10	10/10
25		10/10	10/10	10/10	10/10
50		10/10	10/10	10/10	10/10
100		10/10	10/10	10/10	10/10

Inland Silverside 96-h Acute Survival Test **New England Bioassay**

Analysis ID:	19-4042-4689	**Endpoint:**	48h Survival Rate	**CETIS Version:**	CETISv1.9.2
Analyzed:	10 Oct-16 17:15	**Analysis:**	Linear Interpolation (ICPIN)	**Official Results:**	Yes

Graphics



Inland Silverside 96-h Acute Survival Test — **New England Bioassay**

Analysis ID:	15-2938-8961	**Endpoint:**	48h Survival Rate	**CETIS Version:**	CETISv1.9.2
Analyzed:	10 Oct-16 17:15	**Analysis:**	Nonparametric-Control vs Treatments	**Official Results:**	Yes
Batch ID:	06-6357-7749	**Test Type:**	Survival (48h)	**Analyst:**	
Start Date:	29 Sep-16 12:36	**Protocol:**	EPA/821/R-02-012 (2002)	**Diluent:**	Receiving Water
Ending Date:	01 Oct-16 11:39	**Species:**	Menidia beryllina	**Brine:**	
Duration:	47h	**Source:**	In-House Culture	**Age:**	11 d
Sample ID:	18-0858-1383	**Code:**	6BCCC307	**Client:**	Spectrum Analytical
Sample Date:	28 Sep-16	**Material:**	Not Applicable	**Project:**	
Receipt Date:	29 Sep-16	**Source:**	Gulf Oil Terminal (MA0001091)		
Sample Age:	37h	**Station:**			

Data Transform	Alt Hyp	NOEL	LOEL	TOEL	TU
Angular (Corrected)	C > T	100	> 100	n/a	1

Steel Many-One Rank Sum Test

Control	vs	Conc-%	Test Stat	Critical	Ties	DF	P-Type	P-Value	Decision(α:5%)
Dilution Water		6.25	18	10	1	6	Asymp	0.8333	Non-Significant Effect
		12.5	18	10	1	6	Asymp	0.8333	Non-Significant Effect
		25	18	10	1	6	Asymp	0.8333	Non-Significant Effect
		50	18	10	1	6	Asymp	0.8333	Non-Significant Effect
		100	18	10	1	6	Asymp	0.8333	Non-Significant Effect

ANOVA Table

Source	Sum Squares	Mean Square	DF	F Stat	P-Value	Decision(α:5%)
Between	0	0	5	65540	<1.0E-37	Significant Effect
Error	0	0	18			
Total	0		23			

48h Survival Rate Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	D	4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
6.25		4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
12.5		4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
25		4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
50		4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%
100		4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	0.00%	0.00%

Angular (Corrected) Transformed Summary

Conc-%	Code	Count	Mean	95% LCL	95% UCL	Median	Min	Max	Std Err	CV%	%Effect
0	D	4	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	0.00%
6.25		4	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	0.00%
12.5		4	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	0.00%
25		4	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	0.00%
50		4	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	0.00%
100		4	1.412	1.412	1.412	1.412	1.412	1.412	0	0.00%	0.00%

48h Survival Rate Detail

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	1.0000	1.0000	1.0000	1.0000
6.25		1.0000	1.0000	1.0000	1.0000
12.5		1.0000	1.0000	1.0000	1.0000
25		1.0000	1.0000	1.0000	1.0000
50		1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1.0000	1.0000

Inland Silverside 96-h Acute Survival Test — **New England Bioassay**

Analysis ID:	15-2938-8961	**Endpoint:**	48h Survival Rate	**CETIS Version:**	CETISv1.9.2
Analyzed:	10 Oct-16 17:15	**Analysis:**	Nonparametric-Control vs Treatments	**Official Results:**	Yes

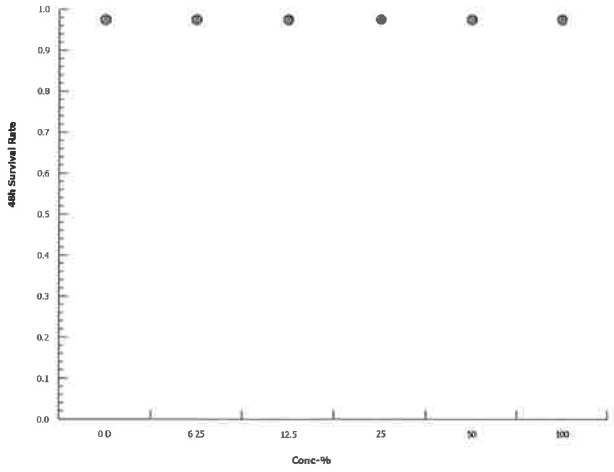
Angular (Corrected) Transformed Detail

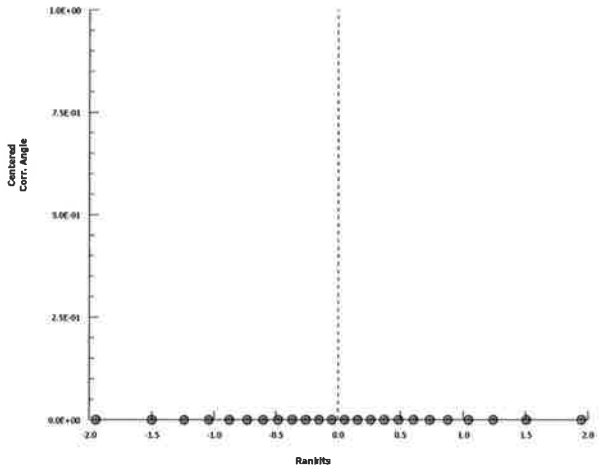
Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	1.412	1.412	1.412	1.412
6.25		1.412	1.412	1.412	1.412
12.5		1.412	1.412	1.412	1.412
25		1.412	1.412	1.412	1.412
50		1.412	1.412	1.412	1.412
100		1.412	1.412	1.412	1.412

48h Survival Rate Binomials

Conc-%	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	10/10	10/10	10/10	10/10
6.25		10/10	10/10	10/10	10/10
12.5		10/10	10/10	10/10	10/10
25		10/10	10/10	10/10	10/10
50		10/10	10/10	10/10	10/10
100		10/10	10/10	10/10	10/10

Graphics





INITIAL CHEMISTRY INFORMATION

CLIENT: Gulf Oil Terminal - 003

PROJECT # 05.0045469.00

RECIEPT DATE	9/29/16	
SAMPLE	Effluent	Receiving Water
COC #	C36-3439	C36-3440
Temperature (°C)	4.8	4.0
Dissolved Oxygen (mg/L)	9.9	8.7
pH (standard units)	9.3	7.6
Conductivity (µmhos/cm)	421	48,600
Salinity (ppt)	< 1	32
Hardness (as mg/L CaCO3)	66	5700
Alkalinity (as mg/L CaCO3)	50	100
TRC - DPD (mg/L)	0.019	0.003
INITIALS	CW	CW

Additional notes:

eurofins | Spectrum Analytical

SUBCONTRACT ORDER

SC26445

SENDING LABORATORY:

Eurofins Spectrum Analytical, Inc.
11 Almgren Drive
Agawam, MA 01001
Phone: (413) 789-9018
Fax: (413) 789-4076
Project Manager: Dulce Litchfield

RECEIVING LABORATORY:

GZA Geoenvironmental, Inc. - Manchester, CT*
77 Batson Drive
Manchester, CT 06042
Phone: (860) 286-8900
Fax: (860) 242-8389

BILL TO:

Eurofins Spectrum Analytical, Inc.
2425 New Holland Pike
Lancaster, PA 17601
Attention: Accounts Payable
accountspayable@eurofinsus.com
PO Number: SC26445

Project: Gulf Terminal - Chelsea, MA

Project #: Gulf Chelsea

PO Number: SC26445

Laboratory ID	Sample ID	Sampled	Matrix	Analysis	Due	Comments
	SC26445-01	28-Sep-16 11:30	Surface Water	Aquatic Tox	**12-Oct-16 16:00**	Client ID is Outfall 003/LC50

Containers Supplied:
Other (L)

Gulf Oil Effluent
~~Stop & Shop Eff #2~~ C36-

C36-3439

Please send notice within 24 hours of obtaining valid data, of the results of all drinking water samples that exceed any EPA or Department-established maximum contaminant level, maximum residual disinfectant level or reportable concentration. Notice should be emailed to SpectrumLabResults@EurofinsUS.com.

Please notify SpectrumLabResults@EurofinsUS.com immediately and prior to conducting analysis if certification is not held for the analyses requested.

Please e-mail results in electronic format to SpectrumLabResults@EurofinsUS.com.

Released By	Date	Received By	Date	Temp °C
[signature]	9.29.16	[signature]	9/29/16@0840	
Released By	Date	Received By	Date	

eurofins | Spectrum Analytical

SUBCONTRACT ORDER

SC26446

SENDING LABORATORY:

Eurofins Spectrum Analytical, Inc.
11 Almgren Drive
Agawam, MA 01001
Phone: (413) 789-9018
Fax: (413) 789-4076
Project Manager: Dulce Litchfield

RECEIVING LABORATORY:

GZA Geoenvironmental, Inc. - Manchester, CT*
77 Batson Drive
Manchester, CT 06042
Phone: (860) 286-8900
Fax: (860) 242-8389

BILL TO:

Eurofins Spectrum Analytical, Inc.
2425 New Holland Pike
Lancaster, PA 17601
Attention: Accounts Payable
accountspayable@eurofinsus.com
PO Number: SC26446

Project: Gulf Terminal - Chelsea, MA

Project #: Gulf Chelsea

PO Number: SC26446

Laboratory ID	Sample ID	Sampled	Matrix	Analysis	Due	Comments
	SC26446-01	28-Sep-16 11:30	Surface Water	Aquatic Tox	**12-Oct-16 16:00**	Client ID is Chelsea Creek/LC50

Containers Supplied:
Other (J) Gulf Oil Diluent C36-344D

Please send notice within 24 hours of obtaining valid data, of the results of all drinking water samples that exceed any EPA or Department-established maximum contaminant level, maximum residual disinfectant level or reportable concentration. Notice should be emailed to SpectrumLabResults@EurofinsUS.com.

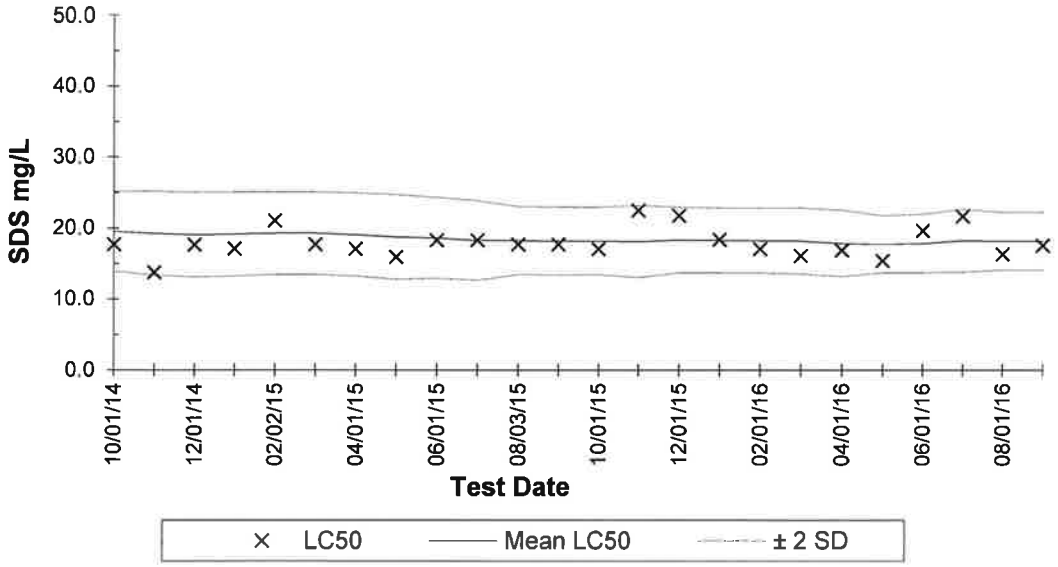
Please notify SpectrumLabResults@EurofinsUS.com immediately and prior to conducting analysis if certification is not held for the analyses requested.

Please e-mail results in electronic format to SpectrumLabResults@EurofinsUS.com.

Released By	Date	Received By	Date	Temp °C
[signature]	9-29-16	[signature]	9/29/16@0840	
Released By	Date	Received By	Date	

New England Bioassay
Reference Toxicant Data: *Mysidopsis bahia* 48-hour LC50

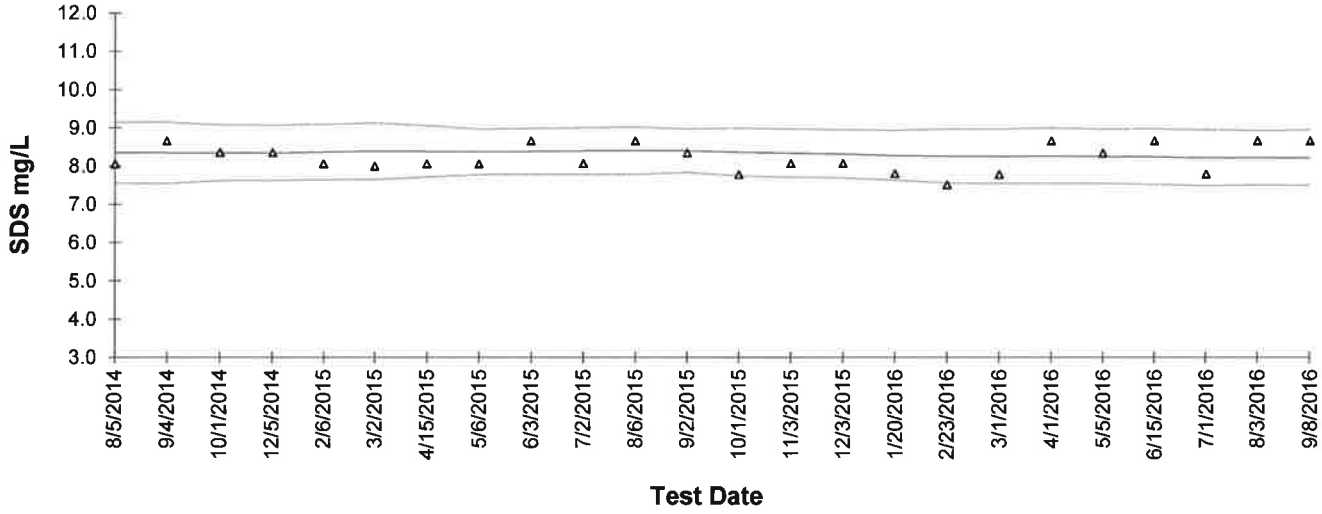
Reference Toxicant: Sodium Dodecyl Sulfate
Test Dates: Oct 2014 - Sept 2016



Test ID	Date	LC_{50}	Mean LC_{50}	STD	-2STD	+2STD	CV	CV National 75th & 90th%
14-1573	10/1/2014	17.7	19.5	2.8	13.9	25.1	0.14	0.26
14-1819	11/3/2014	13.8	19.3	3.0	13.4	25.2	0.15	0.26
14-1962	12/1/2014	17.7	19.1	3.0	13.1	25.0	0.16	0.26
15-109	1/20/2015	17.1	19.1	3.0	13.2	25.1	0.15	0.26
15-140	2/2/2015	21.0	19.3	2.9	13.5	25.1	0.15	0.26
15-258	3/2/2015	17.7	19.3	2.9	13.5	25.1	0.15	0.26
15-414	4/1/2015	17.1	19.1	2.9	13.2	24.9	0.15	0.26
15-549	5/1/2015	15.9	18.7	3.0	12.8	24.7	0.16	0.26
15-704	6/1/2015	18.3	18.6	2.9	12.9	24.3	0.15	0.26
15-900	7/2/2015	18.3	18.3	2.8	12.7	23.9	0.15	0.26
15-1082	8/3/2015	17.7	18.3	2.4	13.5	23.1	0.13	0.26
15-1296	9/1/2015	17.7	18.2	2.4	13.4	23.0	0.13	0.26
15-1458	10/1/2015	17.1	18.2	2.4	13.5	23.0	0.13	0.26
15-1687	11/2/2015	22.5	18.1	2.5	13.1	23.2	0.14	0.26
15-1776	12/1/2015	21.8	18.4	2.3	13.8	23.0	0.13	0.26
16-34	1/4/2016	18.4	18.3	2.3	13.7	22.9	0.12	0.26
16-142	2/1/2016	17.1	18.3	2.3	13.7	22.8	0.12	0.26
16-338	3/8/2016	16.1	18.2	2.3	13.6	22.9	0.13	0.26
16-460	4/1/2016	16.9	17.9	2.3	13.2	22.5	0.13	0.26
16-600	5/2/2016	15.4	17.8	2.0	13.7	21.8	0.11	0.26
16-709	6/1/2016	19.6	17.9	2.0	13.8	22.0	0.11	0.26
16-849	7/1/2016	21.7	18.3	2.2	13.8	22.7	0.12	0.26
16-1058	8/1/2016	16.3	18.2	2.0	14.1	22.2	0.11	0.26
16-1256	9/7/2016	17.6	18.2	2.0	14.1	22.3	0.11	0.26

New England Bioassay
Reference Toxicant Data: *Menidia beryllina* 48-hour LC50

Reference Toxicant: Sodium Dodecyl Sulfate
Test Dates: Aug 2014 - Sept 2016



Test ID	Date	LC_{50}	Mean LC_{50}	STD	-2STD	+2STD	CV	CV National 75th%	CV National 90th%
14-1203	8/5/2014	8.1	8.3	0.4	7.6	9.1	0.05	0.21	0.44
14-1395	9/4/2014	8.7	8.3	0.4	7.5	9.1	0.05	0.21	0.44
14-1574	10/1/2014	8.4	8.3	0.4	7.6	9.1	0.04	0.21	0.44
14-1983	12/5/2014	8.4	8.3	0.4	7.6	9.1	0.04	0.21	0.44
15-142	2/6/2015	8.1	8.4	0.4	7.6	9.1	0.04	0.21	0.44
15-143	3/2/2015	8.0	8.4	0.4	7.6	9.1	0.04	0.21	0.44
15-585	4/15/2015	8.1	8.4	0.3	7.7	9.1	0.04	0.21	0.44
15-623	5/6/2015	8.1	8.4	0.3	7.8	9.0	0.04	0.21	0.44
15-705	6/3/2015	8.7	8.4	0.3	7.8	9.0	0.04	0.21	0.44
15-901	7/2/2015	8.1	8.4	0.3	7.8	9.0	0.04	0.21	0.44
15-1083	8/6/2015	8.7	8.4	0.3	7.8	9.0	0.04	0.21	0.44
15-1297	9/2/2015	8.4	8.4	0.3	7.8	9.0	0.03	0.21	0.44
15-1539	10/1/2015	7.8	8.4	0.3	7.7	9.0	0.04	0.21	0.44
15-1688	11/3/2015	8.1	8.3	0.3	7.7	9.0	0.04	0.21	0.44
15-1825	12/3/2015	8.1	8.3	0.3	7.7	8.9	0.04	0.21	0.44
16-108	1/20/2016	7.8	8.3	0.3	7.6	8.9	0.04	0.21	0.44
16-260	2/23/2016	7.5	8.3	0.4	7.6	9.0	0.04	0.21	0.44
16-303	3/1/2016	7.8	8.3	0.4	7.5	9.0	0.04	0.21	0.44
16-461	4/1/2016	8.7	8.3	0.4	7.5	9.0	0.04	0.21	0.44
16-602	5/5/2016	8.3	8.3	0.4	7.5	9.0	0.04	0.21	0.44
16-798	6/15/2016	8.7	8.2	0.4	7.5	9.0	0.04	0.21	0.44
16-850	7/1/2016	7.8	8.2	0.4	7.5	8.9	0.04	0.21	0.44
16-1060	8/3/2016	8.7	8.2	0.4	7.5	8.9	0.04	0.21	0.44
16-1282	9/8/2016	8.7	8.2	0.4	7.5	8.9	0.04	0.21	0.44

NEB SALTWATER SPEC S ACCLIMATION RECORD

Species:	Client:	Quantity:	*Mortality upon arrival
Menidia beryllina	Test ID:	1160	72
Source:	Lot #: SS16 AI (9-27)	Age:	* Mortality > 10% - Notify management
Aquatic Indicators		9 days on 9-27-16	

Allowable Mortality: > 5% mortality = Notify management.

Allowable Acclimation: Fish = No more than 50% tank volume water change over a 12 (twelve) hour period.

Mysids = Need to be +/- 2 ppt of test dilution water.

Water Chemistry						Observations					
Date	D.O. (mg/L)	p.H. (SU)	Temp. (C) *	Alkal. (mg/L) ml titrant	Sal. (ppt) **	Feedings			Behavioral observations	Do organisms look stressed?	Mortalities	Comments / Treatment type
						AM	NOON	PM	A = Normal, B = Erratic mov. C = Dead	Yes / No	# of dead organisms removed from tank	
9-27-16	10.2	7.4	20.0	185 ml	25	AH	SJP	SJP	A	No		Acclimated to ASW.
9-28-16	7.5	—	22.5	—	26	SJP	SJP	SJP	A	No	0	H_2O Δ w/ ASW
9-29-16	7.3	—	22.6	—	26	SJP	SJP	SJP	A	No	0	H_2O Δ w/ 10L ASW

Laboratory Control Sample (LCS): A known matrix spiked with compound(s) representative of the target analytes, which is used to document laboratory performance.

Matrix Duplicate: An intra-laboratory split sample which is used to document the precision of a method in a given sample matrix.

Matrix Spike: An aliquot of a sample spiked with a known concentration of target analyte(s). The spiking occurs prior to sample preparation and analysis. A matrix spike is used to document the bias of a method in a given sample matrix.

Method Blank: An analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The method blank should be carried through the complete sample preparation and analytical procedure. The method blank is used to document contamination resulting from the analytical process.

Method Detection Limit (MDL): The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix type containing the analyte.

Reportable Detection Limit (RDL): The lowest concentration that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions. For many analytes the RDL analyte concentration is selected as the lowest non-zero standard in the calibration curve. While the RDL is approximately 5 to 10 times the MDL, the RDL for each sample takes into account the sample volume/weight, extract/digestate volume, cleanup procedures and, if applicable, dry weight correction. Sample RDLs are highly matrix-dependent.

Surrogate: An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. These compounds are spiked into all blanks, standards, and samples prior to analysis. Percent recoveries are calculated for each surrogate.

Continuing Calibration Verification: The calibration relationship established during the initial calibration must be verified at periodic intervals. Concentrations, intervals, and criteria are method specific.

SC 26445 BM 1

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

CHAIN OF CUSTODY RECORD

Page 1 of 2

Special Handling:
- ☑ Standard TAT - 7 to 10 business days
- ☑ Rush TAT - Date Needed: 10-12-16

All TATs subject to laboratory approval
Min. 24-hr notification needed for rushes
Samples disposed after 60 days unless otherwise instructed.

Report To: Andrew Adams
Gulf Oil LP
281 Eastern Ave
Chelsea, MA 02150
Telephone #: 617.884.5980
Project Mgr: Andrew Adams

Invoice To: Christopher Gill
Gulf Oil LP
80 William St, Suite 400
Wellesley, MA 02481-3705
P.O No.: Quote/RQN:

Project No: Gulf Chelsea
Site Name: Gulf Chelsea Terminal
Location: 281 Eastern Ave, Chelsea State: MA
Sampler(s): Andrew Adams

F=Field Filtered 1=Na_2S2O_3 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid
7=CH3OH 8=$NaHSO_4$ 9=Deionized Water 10=H_3PO_4 11= none 12=

DW=Dinking Water GW=Groundwater SW=Surface Water WW=Waste Water
O=Oil SO=Soil SL=Sludge A=Indoor/Ambient Air SG=Soil Gas
X1= X2= X3=

G= Grab C=Compsite

Lab ID:	Sample ID:	Date:	Time:	Type	Matrix	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	Analysis: Ammonia	TSS	O&G	BTEX, naphtha-lene, TBA	Vinyl chloride, MTBE + Ethanol	PAHs and total phenol*	Fecal Coliform	TOC	Check if chlorinated
						List Preservative Code below:				3	11	3	2	2	11	11	10	
SC 26445-1	Outfall 003	9-28	11:36	G	SW				1	X								☐
	Outfall 003	9-28	11:30	G	SW				1		X							☐
	Outfall 003	9-28	11:30	G	SW		1					X						☐
	Outfall 003	9-28	11:30	G	SW	3							X	X				☐
	Outfall 003	9-28	11:30	G	SW		1								X			☐
	Outfall 003	9-28	11:30	G	SW				1							X		☐
	Outfall 003	9-28	11:30	G	SW	2											X	☐
																		☐
																		☐
																		☐

MA DEP MCP CAM Report? ☐ Yes ☐ No
CT DPH RCP Report? ☐ Yes ☐ No
☑ Standard ☐ No QC ☐ DQA*
☐ ASP A* ☐ ASP B*
☐ NJ Reduced* ☐ NJ Full*
☐ Tier II* ☐ Tier IV*
☐ Other:
State-specific reporting standards:

QA/QC Reporting Notes:
* additional charges may appply

- * Report phenol down to MDL
- Required Minimum Levels:
- BTEX - 2 µg/L; TBA - 10 µg/L;
- naphthalene and vinyl chl - 5 µg/L
- ethanol - 400 µg/L
- Group 1 PAHs - 0.1 µg/L
- Group 2 PAHs - 5 µg/L

Relinquished by:	Received by:	Date:	Time:
		9/28/16	13:06
	J. Jun	9/28/16	1530

Temp °C
Observed 1.5°
Correction Factor -1
Corrected 0.5°
IR ID # 21

☐ EDD format:
☑ E-mail to: aadams@gulfoil.com, cgill@gulfoil.com

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☒ Ambient ☐ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

SC 26445 8m ✓

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

CHAIN OF CUSTODY RECORD

Page 2 of 2

Special Handling:
- ☑ ~~Standard TAT - 7 to 10 business days~~ ✓
- ☐ Rush TAT - Date Needed: 10/12/16

All TATs subject to laboratory approval
Min. 24-hr notification needed for rushes
Samples disposed after 60 days unless otherwise instructed.

Report To: Andrew Adams
Gulf Oil LP
281 Eastern Ave
Chelsea, MA 02150
Telephone #: 617.884.5980
Project Mgr: Andrew Adams

Invoice To: Christopher Gill
Gulf Oil LP
80 William St, Suite 400
Wellesley, MA 02481-3705
P.O No.: Quote/RQN:

Project No: Gulf Chelsea
Site Name: Gulf Chelsea Terminal
Location: 281 Eastern Ave, Chelsea State: MA
Sampler(s): Andrew Adams

F=Field Filtered 1=Na_2S2O_3 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid
7=CH3OH 8=$NaHSO_4$ 9=Deionized Water 10=H_3PO_4 11= none 12=

DW=Dinking Water GW=Groundwater SW=Surface Water WW=Waste Water
O=Oil SO=Soil SL=Sludge A=Indoor/Ambient Air SG=Soil Gas
X1= X2= X3=

G= Grab C=Composite

Lab ID:	Sample ID:	Date:	Time:	Type	Matrix	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	Analysis: TRC, salinity, pH, TS	Total Recov. (Cd, Cr, Cu, Pb, Ni, Zn)*	LC50 **	Check if chlorinated
SC26445-1	Outfall 003	9-28	11:30	G	SW				1	X			☐
	Outfall 003	9-28	11:30	G	SW				1		X		☐
	Outfall 003	9-28	11:30	G	SW				1			X	☐
													☐
													☐
													☐
													☐
													☐
													☐
													☐

List Preservative Code below: 11 | 11

QA/QC Reporting Notes:
* additional charges may appply

MA DEP MCP CAM Report? ☐ Yes ☐ No
CT DPH RCP Report? ☐ Yes ☐ No
☑ Standard ☐ No QC ☐ DQA*
☐ ASP A* ☐ ASP B*
☐ NJ Reduced* ☐ NJ Full*
☐ Tier II* ☐ Tier IV*
☐ Other:
State-specific reporting standards:

- * Report metals down to MDL
- **LC50 sub to GZA
- Required Minimum Levels:
- Cd, Pb, Ni - 0.2 ug/L
- Cu - 0.5 µg/L
- Cr - 1 µg/L
- Zn - 5 µg/L

Relinquished by:	Received by:	Date:	Time:
		9/28/16	13:06
		9/28/16	1530

Temp °C: Observed 15° | Correction Factor -1 | Corrected 0.5° | IR ID # 01

☐ EDD format:
☑ E-mail to: aadams@gulfoil.com, cgill@gulfoil.com

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☑ Ambient ☐ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen

SC 26446 J Gm

SPECTRUM ANALYTICAL, INC.
Featuring
HANIBAL TECHNOLOGY

CHAIN OF CUSTODY RECORD

Page 1 of 1

Special Handling:
- ☑ ~~Standard TAT - 7 to 10 business days~~
- ☑ Rush TAT - Date Needed: 10/12/16

All TATs subject to laboratory approval
Min. 24-hr notification needed for rushes
Samples disposed after 60 days unless otherwise instructed.

Report To: Andrew Adams
Gulf Oil LP
281 Eastern Ave
Chelsea, MA 02150
Telephone #: 617.884.5980
Project Mgr: Andrew Adams

Invoice To: Christopher Gill
Gulf Oil LP
80 William St, Suite 400
Wellesley, MA 02481-3705
P.O No.: Quote/RQN:

Project No: Gulf Chelsea
Site Name: Gulf Chelsea Terminal
Location: 281 Eastern Ave, Chelsea State: MA
Sampler(s): Andrew Adams

F=Field Filtered 1=Na_2S2O_3 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=Ascorbic Acid
7=CH3OH 8=$NaHSO_4$ 9=Deionized Water 10=H_3PO_4 11= none 12=

DW=Dinking Water GW=Groundwater SW=Surface Water WW=Waste Water
O=Oil SO=Soil SL=Sludge A=Indoor/Ambient Air SG=Soil Gas
X1= X2= X3=

G= Grab C=Composite

Lab ID:	Sample ID:	Date:	Time:	Type	Matrix	Containers: # of VOA Vials	# of Amber Glass	# of Clear Glass	# of Plastic	Analysis: Ammonia	TSS	TRC, salinity, pH, TS	BTEX & naphthalene	PAHs	TOC	Total Recov. (Cd, Cu, Pb, Ni, Zn)*	LC50	Check if chlorinated
										3	11	11	2	11	10	4	11	
SC 26446-01	Chelsea Creek	9-28	11:35	G	SW				1	X								☐
	Chelsea Creek	9-28	11:30	G	SW				1		X							☐
	Chelsea Creek	9-28	11:30	G	SW				1			X						☐
	Chelsea Creek	9-28	11:30	G	SW	3							X					☐
	Chelsea Creek	9-28	11:30	G	SW		1							X				☐
	Chelsea Creek	9-28	11:30	G	SW	2									X			☐
	Chelsea Creek	9-28	11:30	G	SW				1							X		☐
	Chelsea Creek	9-28	11:30	G	SW				1								X	☐
																		☐
																		☐

QA/QC Reporting Notes:
* additional charges may appply

MA DEP MCP CAM Report? ☐ Yes ☐ No
CT DPH RCP Report? ☐ Yes ☐ No
☑ Standard ☐ No QC ☐ DQA*
☐ ASP A* ☐ ASP B*
☐ NJ Reduced* ☐ NJ Full*
☐ Tier II* ☐ Tier IV*
☐ Other:
State-specific reporting standards:

- * Report metals down to the MDL
- Required Minimum Levels:
- BTEX - 2 µg/L
- naphthalene - 5 µg/L
- Group 1 PAHs - 0.1 µg/L
- Group 2 PAHs - 5 µg/L
- Cd, Pb, Ni - 0.2 ug/L
- Cu - 0.5 µg/L
- Zn - 5 µg/L

Relinquished by:	Received by:	Date:	Time:
		9/28/16	13:06
		9/28/16	1530

Temp °C
Observed 1.5
Correction Factor -1
Corrected 0.5
IR ID # 01

☐ EDD format:
☑ E-mail to: aadams@gulfoil.com, cgill@gulfoil.com

Condition upon receipt: Custody Seals: ☐ Present ☐ Intact ☐ Broken
☑ Ambient ☐ Iced ☐ Refrigerated ☐ DI VOA Frozen ☐ Soil Jar Frozen